AMERICAN GAS JOURNAL

90th YEAR | SEPTEMBER, 1948 | VOL. 169, NO. 3

FOR MANUFACTURED AND NATURAL GAS

NEW ROCKWELL-EMCO No. 00 GAS METER WITH PRESSURE CAST ALUMINUM ALLOY CASE

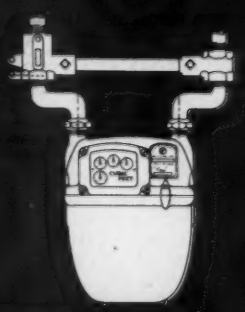
PER

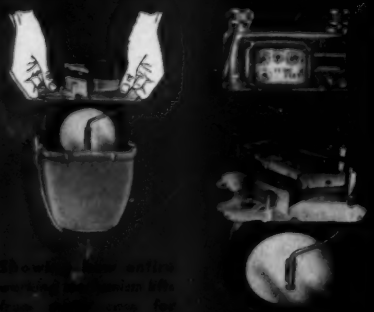
THE *little* METER THAT'S THE *BIG* BUY FOR MOST DOMESTIC SERVICES

This new, *little* meter has a capacity of 150 cfh at ½ in. pressure drop when measuring gas of 0.60 sp. gr. This volume is usually ample for all domestic services except those of consumers drawing a heavy house-heating load. It presents many operational advantages in addition to small size and light weight. To get all the facts—write for bulletin 1163.

TWO *BIG* REASONS FOR USING THESE *little* METERS

PITTSBURGH EQUITABLE METER DIVISION
Rockwell Manufacturing Company Pittsburgh 8, Pa.
Atlanta Boston Chicago Houston Kansas City Los Angeles
New York Pittsburgh San Francisco Seattle Tulsa





THE CIRCULAIRE

Bryant Model 401 Gas-Fired Radiant Panel Heater

Here's a great new panel heater that's at home anywhere . . . pleasing to look at, yet as inconspicuous as any piece of furniture that blends well in the room. *Any* room!

Circulaire heats *two* ways, provides quick, penetrating head-to-toe comfort by radiant rays, *and* the invigorating freshness of clean circulated warm air.

Only 5½ inches thick, *Circulaire* requires little floor space, fits flush to the wall. *No cutting* of floors or floor coverings. *Circulaire* mounts to the wall with only four screws applied to studding.

Sell the *Circulaire* for auxiliary use or year-round service. Three sizes for natural, manufactured, L.P. and other gases, manual or automatic controls. A.G.A. approved.

Let the pup be furnace man

bryant

AUTOMATIC HEATING

BRYANT HEATER COMPANY • CLEVELAND, OHIO

One of the Dresser Industries

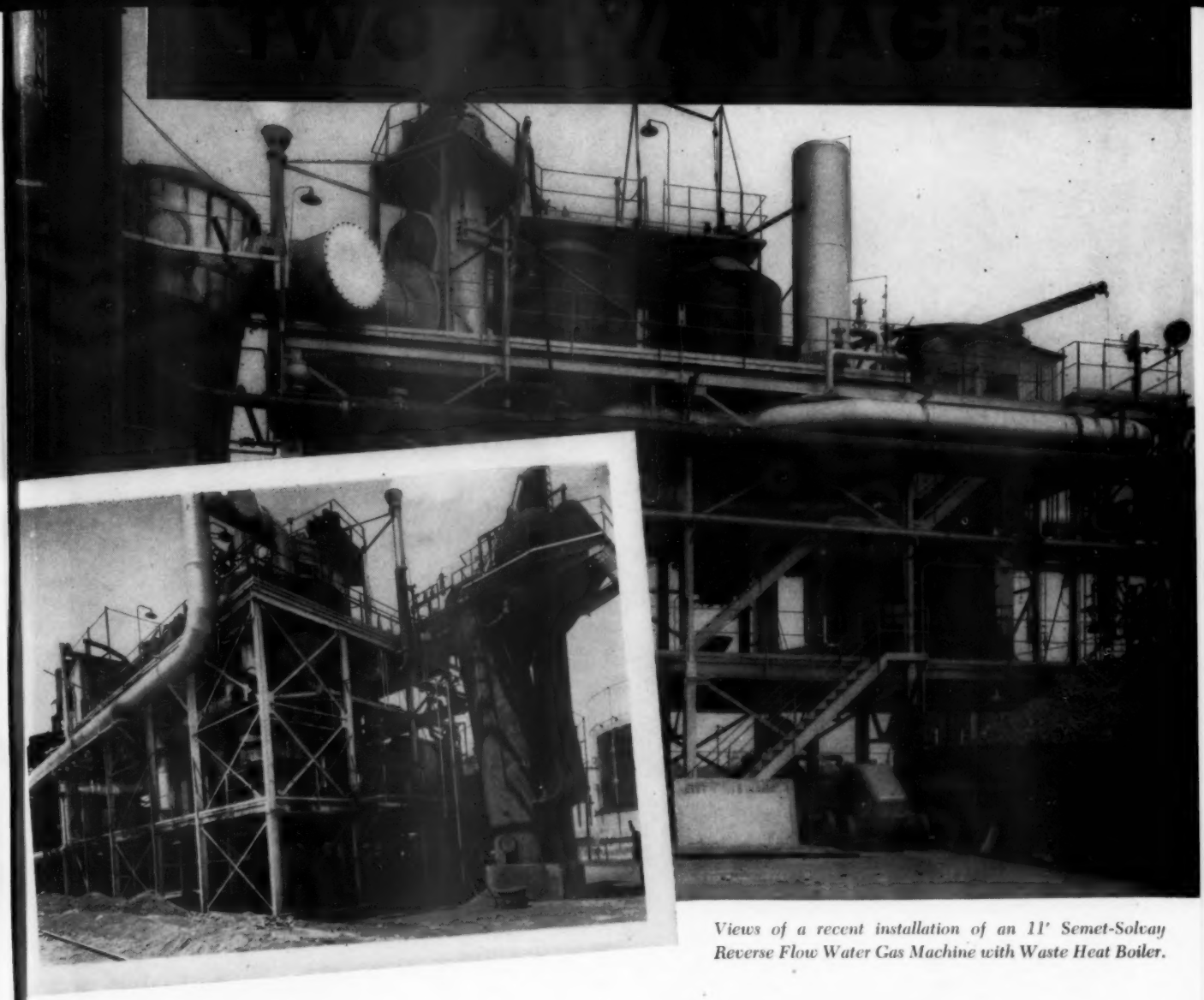
CIRCULAIRE features built-in draft diverter entirely enclosed by the sturdy ivory-enamel-finish steel cabinet. Flue adapter has provision for round or oval vent pipe.

BURNER COMPARTMENT, with front door access, conceals controls and the quiet, multiple-drilled-port cast iron burner. Standard pilots are Bryant *Model H* for automatic control, 100% shut-off for LP-gases, constant-burning non-thermal for manual control.

HEAT EXCHANGER is separated from wall and cabinet front by multiple air spaces, is made of welded steel. ***"Ruffled" porcelain enamel front increases its radiating capacity.***

LIVING ROOM | OFFICE | BATHROOM | MOTEL | RECREATION | COTTAGE

AMERICAN GAS JOURNAL, September, 1948. Vol. 169, No. 3. Published monthly by American Gas Journal, Inc., at 34 North Crystal St., East Stroudsburg, Pa., Executive and Editorial offices at 53 Park Place, New York 7, N. Y. Entered as second class matter October 7, 1928, at the post office at East Stroudsburg, Pa., under the Act of March 3, 1879. Printed in U.S.A.



Views of a recent installation of an 11' Semet-Solvay Reverse Flow Water Gas Machine with Waste Heat Boiler.

SHORTAGES and excessive costs of gas oil and solid fuel plague the gas production man. And these headaches probably will remain well into the foreseeable future.

One form of relief is available in the Semet-Solvay Reverse Flow Water Gas Machine – designed to offer the fullest *flexibility* and *efficiency*.

Since the first installation in 1937, this machine has proved to be singularly sound in design. Operations in different parts of the country under widely varying conditions have demonstrated its essential worth.

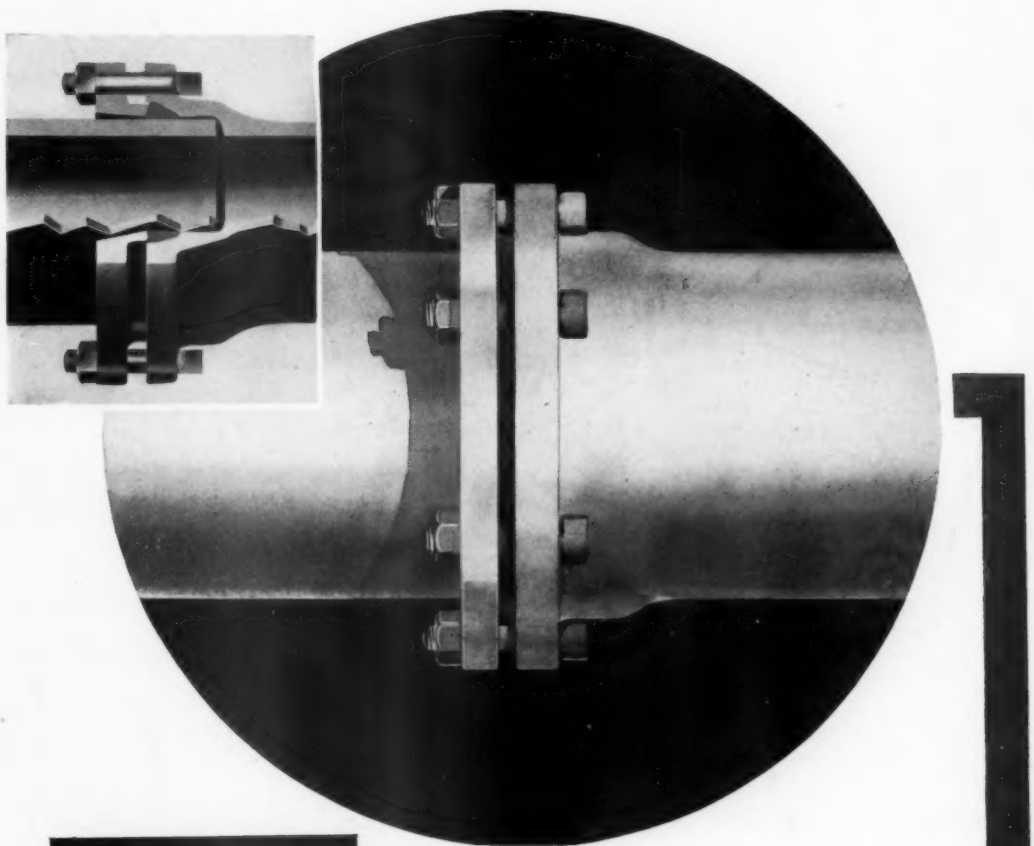
FLEXIBILITY. Generator fuel and carburetor oil can be changed to take advantage of market conditions. Coke, anthracite or coke with high percentages of bituminous coal can be used. Gas oil, Bunker C oil or intermediate grades can be used as carbureting oil without changes in the machine.

EFFICIENCY. Higher efficiencies are obtained due to counter-current flow of blue gas and oil fog. Carbon deposits resulting from heavy oil carburetion are utilized, thus reducing fuel consumption. Oil with a Conradson carbon content of as high as 15% has been successfully employed with no loss in operating efficiency.

High pressure gas distribution main being laid in a large midwestern city using approximately four miles of 20-inch standardized mechanical joint cast iron pipe.

GROWTH.

Steadily growing is the use of standardized mechanical joint cast iron pipe for distribution and feeder mains *regardless of pressures or types of gas.* For example, a large midwestern city has recently completed a four-mile, 20-inch, high pressure cast iron gas distribution main to carry manufactured gas at 15 to 25 pounds pressure (see installation photo on page opposite). A few years hence this main will be used as a feeder main to bring in natural gas at 50 pounds operating pressure. The ability of standardized mechanical joints to give bottle-tight performance with dry gas at high pressures is well confirmed. The ability of cast iron pipe to serve for more than a century is proved by service records. Cast Iron Pipe Research Assn., T. F. Wolfe, Engr., Peoples Gas Bldg., Chicago 3.



CAST IRON

Standardized **MECHANICAL JOINT**

PIPE

Remember the '46 Gas Convention?

Actual space already contracted for confirms that

THIS YEARS EXHIBITION

in ATLANTIC CITY, Oct. 4th to 8th Will be the Industry's Biggest and Best

THE FIRST REAL EXHIBITION OF

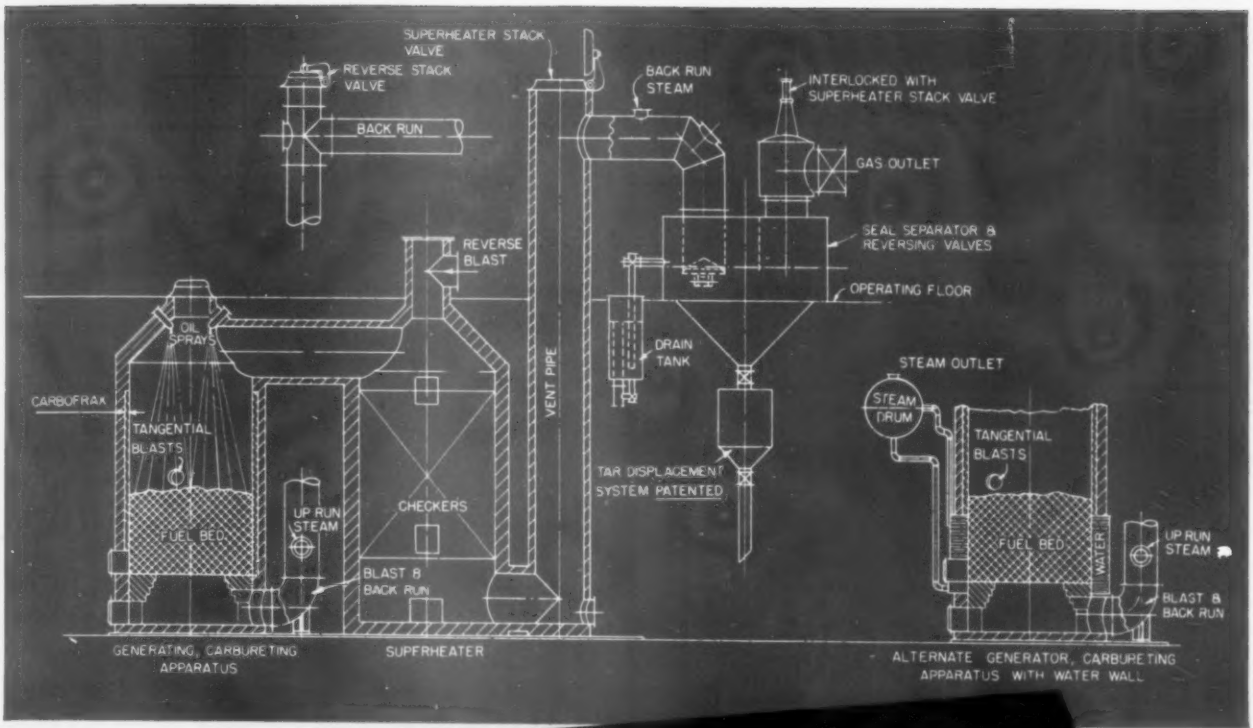
POST WAR GAS APPLIANCES AND EQUIPMENT

Make your plans NOW— Make your reservations NOW

COME TO ATLANTIC CITY IN OCTOBER!

Gas Appliance Manufacturers Association
60 East 42nd St., New York 17, N. Y.

The Gas Appliance Manufacturers Association will conduct the Atlantic City Exhibition, in conjunction with the Thirtieth Annual Convention of the American Gas Association, to keep the Gas Industry abreast of the latest in gas appliances and equipment.



GASMACO Counterflow Water Gas Apparatus

PATENTED

Here are some of the outstanding advantages of the GASMACO process for manufacturing carbureted water gas:

- Set is easily operated with soft coal and bunker C oil.
- No carbon deposits — periodic cleaning of carbon from carburetor is eliminated.
- Bituminous coal fuel bed withstands higher blasting rates than previously possible.
- Sidewall clinker adhesion is reduced.

WRITE FOR COMPLETE INFORMATION

THE GAS MACHINERY COMPANY

16114 WATERLOO ROAD
CLEVELAND 10, OHIO

Designers Fabricators Erectors

•

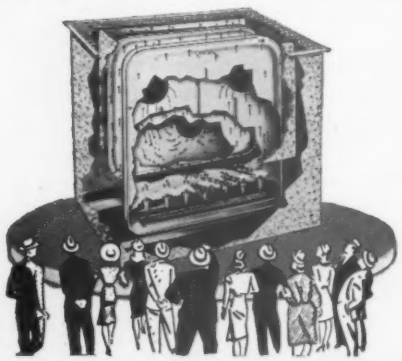
Gas Plant Equipment and Industrial Furnaces

EMPIRE means Business!

AMERICA'S FIRST LINE FOR CONSUMER ACCEPTANCE...

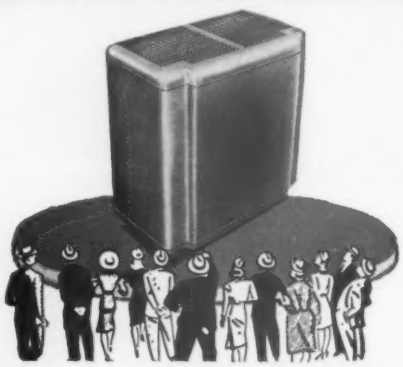
your FIRST line for PROFITS!

EMPIRE GAS FLOOR FURNACE



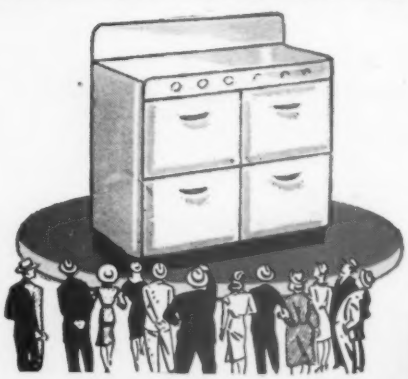
Fits below floor line, saves valuable living space. Adaptable to any type home or commercial use. Engineered for any kind of gas. BASO 100% automatic Safety Pilot standard equipment.

EMPIRE GAS CIRCULATOR HEATER



Designed for any type home or commercial use. Engineered for any kind of gas. Completely vented. Stainless steel Pilot Burner standard equipment. Streamlined in the modern manner.

COMING SOON! EMPIRE GAS RANGE



The last word in beauty, designing and cooking efficiency. The Gas Range that anticipates the housewife's wish in convenience. Worth waiting for.

WATCH FOR ANNOUNCEMENT

FIRST in ENGINEERING

Engineered for the available gas supply—not merely adapted. Outstanding in performance. There's a reason.

DEVELOPED BY EMPIRE MAKES THE DIFFERENCE

FIRST for ECONOMY

Users appreciate the savings in fuel costs due to the advanced design and efficiency of the famous EMPIRE "THRIFTMATIC" Burner.

FIRST for TROUBLE-FREE SERVICE

Installation is easy. Adjustments and field service unnecessary. Maximum efficiency year after year.

★ WRITE TODAY FOR FULL INFORMATION

EMPIRE STOVE CO.

BELLEVILLE, ILLINOIS

MANUFACTURERS OF GAS HEATING AND COOKING APPLIANCES

VOLUME 169
Number 3

AMERICAN GAS JOURNAL

WHOLE
NUMBER 3894

ESTABLISHED 1859

SEPTEMBER 1948

PUBLISHED MONTHLY BY
AMERICAN GAS JOURNAL, Inc.
53 Park Place, New York 7

S. G. KRAKE, *President and Treasurer*

M. E. KELLEHER, *Secretary*

S. G. KRAKE, *Managing Editor*

H. T. MATTHEW, *Business Manager*

JAMES C. MUNN, *Midwest Representative*
2253 Delaware Drive, Cleveland 6, Ohio
Tel. ERieview 1726

JEROME W. POWER, *Chicago Representative*
708 West 76th St., Chicago 20
Tel. Vincennes 5734

FRED A. HERR, *Pac. Coast Representative*
424 S. Broadway, Los Angeles 13
Tel. MAdison 6-5421

Copyright, 1948, American Gas Journal, Inc.

Subscription $3.00 per year U.S.A.; $4.00 Canada; $5.00 Foreign. Single copies 35 cts.

CONTENTS

Washington, D. C. Celebrates a Century of Gas Service—Harold F. Hetrick 11

A.G.A. Convention Program and G.A.M.A. Exhibit 14

Principles of Accident Prevention—W. F. Brown 15

Book Reviews 18

Utility House Organs are Profit Makers—David Markstein .. 22

New Law of Gas Contracts—Leo T. Parker 25

Underground Storage of Natural Gas and Propane 29

Large Volume Water Heating, Chapter IX Part 1—Malcolm B. Mackay 31

Gas-Oil Burner Provides New Protection for Homes that are Heated With Gas 34

Desulfurization of Coal During Carbonization 37

Along the Pipe Lines 38

New Equipment and Appliances 40

News of the Gas Industry 41

New Bonus Plan for Appliance Sales Heads 50

American Gas Journal is indexed each month by Engineering Index Inc., 29 West 39th St., New York.

THE CURTAIN RISES

on the NEW

Come and see this Modern,

Revolutionary and New Model

Booths 317-18-19-20-21

Atlantic City Convention

October, 4 to 8

THE CLEVELAND HEATER CO.

MANUFACTURERS OF

Rex Automatic Water Heaters : "Elno" Protectors

2310 SUPERIOR AVENUE CLEVELAND 14, OHIO

SEPTEMBER
1948

AMERICAN
GAS JOURNAL

VOLUME 169
NO. 3

Washington, D. C. Celebrates a Century of Gas Service

History, Service and Public Relations the Dominant Themes

By

Harold F. Hetrick

Washington, D. C.

IF PROPERLY PLANNED, a company's anniversary observance can be made to pay rich dividends in the form of better employer - employee relations. This has been the experience of the Washington Gas Light Company, America's oldest utility in existence now under Federal Charter, from a centennial celebration which marks its growth since 1848 from a small concern with a dozen employees and one customer (the Government) into one of the industry's large organizations with 2,200 employees and 240,000 customers. While public response to the centennial observance has been most enthusiastic, company officials readily agree that the celebration's most important outcome has been the greater appreciation by employees of the importance of their jobs and their company to the development of the community.

This valuable end-product in the form of improved employee understanding is no accident. It's just another evidence of the fact that the company realizes that an employer-employee relations program is a long-term proposition, and not an emergency expedient confined only to bad times to occasions when the company has an "axe to grind." For years, through the company's house organ, "Wonder Flame," and other media of employer - employee communication, the company has made a special effort to keep workers informed as to important matters of policy, programs, operations, products, and sales.

Yet 3 years ago, when centennial plans were first being considered, it was never realized that an anniversary observance could prove to be such an effective means for developing a deeper loyalty and closer relationship between the company and its employees. At that time, the company had no specific ideas as to the type of centennial program it wanted; it knew only the type it didn't want. That was the "we-did-it-ourself" type which leaves only a sour taste in the mouth of the customer and arouses the ire of the employee.

While searching for an appropriate medium to tell its centenary story, several staff members turned up a dramatic bit of information pertaining to the company's history. They discovered that the firm had received its charter from President Polk just 4 days after the cornerstone of the Washington Monument was laid. This historical item gave the staff an idea. Since the company's history and growth was so closely allied with that of the Nation's Capital, why not tell its own story in terms of Washing's expansion from a city of mud and swamp in 1848 to one of the great cities of the world?

This public-service theme was used to good effect in almost all of the publicity material and events planned to publicize the centenary. These included: radio programs, an anniversary number of the company's house organ, newspaper stories, employee events, a float, a book, a recipe book, window exhibits, newspaper advertising, a lobby exhibit of interesting documents relating to the company's growth, and special advertising, such as truck posters, a blotter, a bill insert, a billing envelope, and an anniversary letterhead. Most of these materials or events had one point in common: the company's story was assigned a minor role, compared with the major part played by gas in development of Washington.

Marcy L. Sperry
President
Washington Gas Light Co.

Much of the credit for the success of the centenary company officials feel should be given to the following factors:

Employee-First Attitude: In all its publicity efforts, whether the materials were designed for the employee or the general public, the company recognized the employees as

equal partners with management in contributing to the organization's advancement. In so doing the company wisely gratified one of the employees' basic desires: to achieve personal recognition for a job well done. This willingness to share credit for the company's progress with the employee was aptly expressed by the cover caption of the anniversary issue of the company's house organ, "Wonder Flame," which read: "Our Hundred Years and You."

The company also expressed their high regard for employees in other ways. Special steps were taken to see that the employee got important information concerning the centennial observance before it reached the public. In this way employees felt they had a ringside seat at the anniversary show. They were not placed in the embarrassing position of watching the show in the big tent from an outside peephole while the public sat on the inside.

Management's sincere regard for employees was further demonstrated by an employee reception staged at the Statler Hotel. Hawaiian orchids, flown in from the West Coast, were given to all ladies in attendance, and over 2,000 employees, including their wives or husbands, enjoyed a buffet dinner that pointedly skipped the usual long-winded speeches by company officials. Wives of employees who had to work received orchids by special messenger the day afterwards. In addition these employees received a credit card for use at one of the Capital's leading seafood restaurants.

This "employee-first" attitude was indicative of the company's broad conception of public relations. Officials recognized the fact that public relations and employee relations are one and the same thing. What an employee thinks or says about his company during and after business hours is often more powerful in influencing public opinion than the press release or promotional literature prepared by the firm's advertising department. They also recognized that a more understanding employee is a more cooperative and loyal employee.

Community-Service Theme: The "community-service" approach, used to such good advantage in the company's publicity material, was mainly responsible for the wide recognition accorded the centennial not only by employees, customers, and members of the industry, but also by representatives of the general public: teachers, librarians, and public officials. Probably the most outstanding publicity item released by the company during its centenary is a company history entitled "Growing with Washington." This book is in effect a history of Washington itself. It tells a fascinating story of how the progress and expansion of the gas industry paralleled that of the Nation's Capital. Edward T. Stafford, secretary of the company, and Bob Hershman, executive assistant, are the co-authors, and Albert W. Atwood, a director of the company and professional writer, the editor. H. H. McMurray, advertising manager, supervised the layout and make-up.

Nowhere in this 100-page story is there a high-pressure selling message. It is a factual history, based on research conducted in the company archives, the National Archives, the Library of Congress, the District of Columbia Public Library, and the American Gas Association Library, and involved the searching and reading of about 100,000 documents and letters. Because the book is such a straightforward job of story-telling, it promises to become a classic in its own right.

The critical reception accorded the release of "Growing With Washington" would delight the heart of any publicity agent. It was treated in a manner similar to that of a major work of non-fiction. The authors were interviewed on two WRC-NBC radio programs. Two radio commentators, one a book reviewer and the other, Frank Bourgholtzer of the "White House Correspondent" program devoted their radio time to a review of the book. The *Washington Post*, generally recognized as one of the country's leading newspapers, hailed the volume as one of special interest as a revelation of how slow was Washington's growth in the early part of the 19th Century and "how long it has taken the Capital to attain the metropolitan status envisaged by its founders."

The affectionate understanding of local history displayed in the book has given it universal appeal. Copies were sent to members of the industry. Their response was prompt and cordial. One Chicago official wrote that the Washington Gas Light Company had rendered not only the city "but also the gas industry a valuable service." Another member of the industry found helpful hints in the book for his own company's anniversary celebration. One of America's leading universities requested a copy to use in their public relations course. Librarians wanted copies to add to their local history collections. Customers, too, were enthusiastic. One who had over 14,000 annotated references on Washington history wrote that she found several unfamiliar items of local history in the company's book. Among these were: the gaslight on the Capitol dome, the letter written by President Lincoln to the head of the B. & O. Railroad requesting that coal be delivered to Washington to avert a gas crisis; and the illumination of the White House by gas. A school girl requested a copy because "it was such a beautiful book."

Because of its location in the National Capital, the company's past was naturally interwoven with events of national scope. But officials are quick to point out that other companies may have equally rich historical material reposing in their vaults. Much research must be done, however, to uncover these treasures. The company's basic research began with an effort to trace a rumor that the company's first president, J. F. Callan, had been secretary to Jefferson Davis, President of the Confederacy. This rumor proved to be untrue, but the researchers turned up an item of even greater interest. They found that one of the company's founders, Benjamin B. French, who was a Chief Clerk of the House of Representatives, preceded Lincoln to the rostrum at Gettysburg and also laid the cornerstone of the Washington Monument. This bit of information gave the staff the idea for the public-service theme used to such good advantage in their centennial story.

In selecting the format for their history, "Growing With Washington," the company chose a book form, in the belief that a more permanent type of publication would not be readily consigned to the waste basket, the unhappy fate of much public relations literature in pamphlet form. Objective writing and excellent photographs also added to the history's appearance of permanency. No effort was spared to locate rare photographs and prints, some of which appeared in published form for the first time. Many customers expressed their thanks to the company for including photographs which brought back nostalgic memories of childhood days. It was often difficult to establish the authenticity of these illustrations. For example, the identity of the first house in the District lighted by gas was established by an early resident only after a long search.

Personnel and Public Relations Functions Coordinated: The company recognized these two basic facts

in planning their centennial public relations materials: that customers often form their opinions of a company from employee contacts, and that no amount of well-prepared company literature can destroy bad impressions gained by customers from such contacts. It was decided, therefore, that the personnel and public relations departments should speak with one voice.

Literature designed to build goodwill among customers should not forget the employees, nor should material directed to employees overlook the fact that many of them are customers. To attain these twofold objectives, the activities of both the personnel and public relations departments were coordinated at all times. Letters from customers and employees indicate that these objectives of building good-will among customers and employees were attained. One employee letter had an unusual twist. While most employees feel that it is management's job to gauge their opinion of the company, this worker wrote that she held the opposite view. She felt that employees should tell the company when they appreciated what it was doing for them. In this case she wanted management to know that she appreciated the recognition given to employees during the company's anniversary celebration!

Program Carefully Planned: Company officials believe that many organizations fail to reap the full reward from their anniversary effort because too little time and money are expended in preparing and carrying out the special events designed to publicize such an observance. Too often anniversary plans stress short-term publicity values instead of long-term good-will building objectives. It was pointed out that the company's history took over two years of painstaking research which required the scanning of hundreds of books and manuscripts and the interviewing of oldtimers and employees. But the results were worth the effort.

This careful research turned up a wealth of historical information that was invaluable in preparation of the company's history. Research data accumulated by staff workers more than filled three file cabinets. This effort to obtain all the facts about the company's background resulted in disclosure of information unknown even to historians. For instance, the mystery surrounding the location of the Washington Monument cornerstone was cleared up by Bob Hershman, co-author of the company's history. The item was important enough

1848
1948
Growing with Washington . . .
1848 . . "on July Fourth the cornerstone of the Washington Monument was laid amidst elaborate ceremonies, and four days later the Washington Gas Light Company was granted its charter by Congress."
THUS, to our employees, customers, friends, July 8, this year, holds a special significance . . . marking a milestone in a record of continuous public service in the Nation's Capital. Established when Washington was emerging from a sprawling village and taking on the attributes of a thriving metropolis, the Company made available the first requisite to modern living—versatile, flexible Gas. Now, as magically modern as in 1848, Gas is bringing to more than a million people in the Greater Washington area this superb public service.
TO COMMEMORATE our hundredth anniversary we have published our personal story. It is a record of growth —of public service and progressive development—a story of a great company and a great city—for, indeed, the record of our progress is a story of "Growing with Washington..." A limited number of these illustrated books is now available for distribution. You may reserve your copy by mail or telephone. Requests will be filled in the order in which they are received.
TODAY, Washington Gas Light Company stands as an example of typical American enterprise. With its heritage of wisdom and experience it looks to the future—young in spirit, ever growing, with a loyal personnel and progressive leadership—eager for the era to come.
WASHINGTON GAS LIGHT COMPANY

Reproduction of poster announcing the publication of the 90 page book "Growing With Washington", the story of a century of gas service.

to rate space in one of Washington's leading newspapers.

Other research findings, which were bound together in files for future use, included the following: sample letterheads of Washington firms, a chronological arrangement of interesting company documents and letters, and samples of early advertising and letter-writing.

Company Effort From Research to Editing: Every step in preparation of the company's history from the research to the editing was handled by company officials. Had the firm "farmed out" this job to an outside organization, it is quite likely that the finished product would not have had the objective style of the company-prepared history. Nowhere in the 100 pages of this work is there evidence of the slick, glib style of the professional copywriter. It is a book about the company by its employees.

To sum up, the Washington Gas Light Company considers the anniversary observance as a highly effective means of building customer and employee good-will. It regards these basic considerations as essential to the successful planning of any anniversary celebration:

Make the anniversary celebration a joint employer-employee affair

Stress company's service to community

Build public relations program around the employee—the company's No. 1 public

See that publicity materials to commemorate anniversary bear a "Made at Home" stamp.

A. G. A. Gas Convention Program and G. A. M. A. Exhibit Promise Peak Interest and Attendance

THE largest attendance in its history is expected at the thirtieth annual convention of the American Gas Association and the exhibition of the Gas Appliance Manufacturers Association which will be held in Atlantic City, N. J., October 4-8. Factors influencing this anticipated record attendance are a strong business program, the largest and most spectacular exhibition of new and improved gas appliances and equipment, and greater participation of dealers and wholesalers from all parts of the country.

Under the leadership of a convention committee headed by past A.G.A. President T. J. Strickler of Kansas City, business sessions have been planned to include a meeting of the Natural Gas Department on Monday morning, October 4; a meeting of the Manufactured Gas Department that afternoon; and general sessions on the mornings of October 5, 6 and 7. Sectional meetings will be held the afternoons of the latter three days and the popular Home Service Breakfast will take place Wednesday, October 7.

A major part of the program for October 7 and 8 will be directed toward dealers and a concerted effort is being made to extend the benefits of the appliance and equipment exhibition to a large segment of the gas appliance field. This is the first time the exhibition has been open to wholesalers and dealers and more than 25,000 of them are receiving special invitations to attend. A merchandising program for dealers is being arranged jointly by A.G.A. and G.A.M.A. for Thursday, October 7.

Liquefied petroleum dealers are also being invited to the exhibition and will hold a meeting on Friday, October 8, at which time G.A.M.A. will sponsor a merchandising clinic program.

Many vital industry-wide problems will be discussed at the general sessions by authoritative speakers from within and outside the gas industry. Among the topics on the tentative program are such important subjects as regulation, labor relations, salesmanship, promotion, advertising and research activities, and an analysis of the commercial gas load.

Sectional programs will delve into every phase of the gas business and provide much valuable information on new developments. The Accounting Section plans to hold four separate meetings Tuesday afternoon at Haddon Hall, namely, Customer Activities, General Accounting and Property Records, Taxation, and Materials and Supplies.

A luncheon featuring a topflight utility speaker discussing the value of the industrial gas load to the gas industry will open the Industrial and Commercial Gas Section program Tuesday afternoon at the Ritz-Carlton Hotel. The A.G.A. commercial gas cooking promotional program will hold a prominent spot on the program.

Colorful dramatic presentations will highlight the Residential Gas Section program Wednesday afternoon at the Ritz-Carlton Hotel. Servel, Inc. will present a skit on gas refrigeration utilizing eight people and a revolving stage.

A nationally-known authority in the water heating field will analyze the question "What About Gas Water Heating?" Rounding out the program will be an inspirational speaker discussing the topic, "So You Think You're Slipping?" Also of interest to Home Service personnel and all sales-minded delegates will be the Home Service Round-Table symposium to be held Tuesday afternoon at the Ritz-Carlton Hotel.

Arrangements have been made for the initial showing to the gas industry of the film production, "Eternal Flame," a comprehensive story of the natural gas industry. It will be presented daily through the courtesy of the Columbia Gas System under whose sponsorship the film was produced.

Prior to the exhibition showing, Columbia will exhibit the film on Monday October 4 at the close of each of the two AGA convention sessions. After that it will be shown to utility representatives, appliance manufacturers, distributors, dealers and other visitors to the exhibition of gas appliances and equipment. "The Eternal Flame," will be presented daily at regular intervals in a "Little Theatre," in Room B, at the stage end of the Atlantic City Auditorium.

"'Eternal Flame,' is not the story of Columbia alone, but the story of any large gas distribution system," according to stuart M. Crocker, president of The Columbia Gas System, Inc. "It reveals some of the drama and a few of the problems that are met in providing gas to millions of homes and industries throughout the country."

A. G. A. Laboratories Testing Facilities Expanded on the Pacific Coast

Acquisition by the American Gas Association of a new property to provide additional laboratory facilities on the West Coast in order to augment already overtaxed facilities and meet growing appliance testing needs has been announced by Mr. H. Carl Wolf, Managing Director.

On the Pacific Coast the Association has purchased a building for laboratory testing purposes, adjoining the present Los Angeles property, which almost doubles the present floor space available there. This building, erected in 1940, is excellently suited for testing operations. It fortunately became available at a time when otherwise it would have been necessary to undertake expansion on a much less satisfactory and piecemeal basis. According to Mr. Edwin L. Hall, Laboratories Director, very little in the way of remodeling will be necessary other than the installation of the necessary partitions and piping for manufacturers' rooms. In addition, a gas cracking unit is being installed for the producing of manufactured gas on the Laboratories' premises, as the former supply is no longer available.

The newly purchased building contains approximately 9,000 square feet of floor space in a structure 100 feet by 85 feet, some floor space being located on a balcony. Ground space totals 15,000 square feet, the site being 150 by 100 feet. Thus additional parking space as well as space for the new gas cracking plant is provided. Without this additional ground space it would have been necessary eventually to move gas storage facilities to the roof of the new building erected and also to relocate facilities for producing manufactured gas.

Principles of Accident Prevention

By

W. F. Brown

Safety Director
Consolidated Edison Company
of New York, Inc.
New York, N. Y.

In these times of constantly increasing material and labor costs, the matter of "safety" becomes more and more important in every industry, and particularly so in the gas industry.

In this paper, presented at the Joint Production and Chemical Conference, May 24-26, Mr. Brown enumerates many reasons why safety programs should be properly inaugurated and carried through. He gives figures to show how costly to the company lost time accidents are.

His comments should have the thoughtful consideration of executives of both large and small utility companies.—Ed.

SAFETY is as old as human life itself. It has been practiced in one form or another ever since Adam and Eve. The caveman had to develop a strong sense of self-preservation in order to survive. The warriors of the Middle Ages developed suits of armor and other safety devices to protect themselves in battle. Ancient sailors practiced safety on the high seas in order to overcome the great risks in competing with nature. They did not call it safety, they called it seamanship. In the early part of the 19th Century, the American railroads were forced to build safety into their equipment because at that time a journey of 100 miles or more was an extremely dangerous undertaking. Today it is far safer to be on a train than in your own home.

Organized accident prevention work in industry received its greatest impetus with the passage of the Workmens' Compensation laws beginning in 1914. These compensation laws removed the negligence factor as a basis for the payment of employee claims on account of injury. Prior to this it was necessary for the employee to sue his employer and not only prove that his employer was negligent, but that he himself did not contribute to his own injury before he could collect damages under common law.

Every year the Workmens' Compensation laws are being liberalized with more and more benefits added, which means that the dollar value of accident prevention is increasingly evident to wide-awake gas utility executives. The more responsible executive is asking the "$64 question" —"What is the sense in 'stewing and sweating' to produce gas at the lowest possible cost for fuel and labor and then turn around and permit 'Gas-eater' Joe Doakes to pour the profits 'Down the accident drain pipe' through failure to purge properly or failure to observe the 'hold-off' procedures."

It has been said that the present type of industrial safety program had its inception through the profit motive, which was and still is, a powerful stimulus to safety effort. This is especially true today as most companies are paying full wages during accident disability.

The National Safety Council, which was started by public-spirited utility people, has during the past 35 years been a tremendous influence for good in helping American industry to control accidents and increase productivity.

The American Gas Industry was among the first to realize the importance of accident prevention and it has been among the leaders and supporters of the safety movement since its inception. The very nature of the business required that adequate steps be taken to develop the necessary skills and safeguards for efficient operation. The fact that you have included the subject of accident prevention in your program today indicates a sincere interest in the safe operation of your plants and a desire to prevent needless suffering and economic losses. This is encouraging because there is a real danger of slipping backward fifteen or twenty years in the gas industry unless steps are taken now to arrest the present adverse trend of accidents.

In order to discuss the principles of accident prevention, it is first necessary to define the term "Safety" which means the prevention of all accidents and all losses, or the absence of danger and freedom from harm. An accident, on the other hand, is an event or incident which results in delay or upsetting of the routine program, *sometimes* resulting in injuries to persons, property damage and loss of business or good-will. A compensable injury is an accidental bodily injury arising out of and in the course of employment. It can readily be seen, therefore, that the term "Safety" is synonymous with the word "Efficiency." The efficient plant is considered to be a safe plant and vice versa.

Efficiency is more than making the most B.T.U.'s from the least amount of fuel. It is the intelligent blending of money, men, materials and machinery into a harmonious production and distribution program — all four are necessary but the greatest of these is—men!

Management's Accident Prevention Responsibilities

It is an accepted principle of enlightened management that accident prevention is not only humane, but progressive and profitable. It is also an accepted principle that management is responsible for the conservation of men as well as machinery and profits. The old "risk of employment" theory has disappeared forever along with the "contributory negligence" theory and progressive management now accepts its full responsibility to "go all out" in protecting its greatest asset—its manpower.

In the public utility business we are responsible to 4 major groups for the carrying on of an effective safety program:—

A—the public (customers)
B—the stockholder (owner)
C—the employees (fellow-workers)
D—governmental bodies (Public Service Commission—Labor Depts.)

A—We are responsible to the pub-

lic because ours is a public service business and therefore, our first interest is the rendering of gas utility service with complete safety to the public. We realize too, that accidents increase the cost of living, since the cost of accidents is included in the price of everything we buy, including public utility service.

B—We are responsible to our stockholders (the owners of our business) for conducting our business along sound business principles. Our gas service must be inexpensive, must be uninterrupted and must be safe.

C—We are responsible to our employees (fellow-workers) for the selecting, training, instructing and supervision of the employee. A part of our responsibility to the employee is to provide a safe plant, safe equipment and safe working conditions. We realize that it is difficult, if not impossible, to eliminate all of the hazards of life, however, our aim is to remove as many of the hazards as possible and then train the employee to avoid those hazards which cannot be removed. For example—if there is a hole in the floor, management has the choice of repairing it, thereby eliminating the hazard completely—or placing a temporary guard around it and then attempt to educate the employee to walk around the opening. Obviously, the first method is permanent and consequently cheaper and more efficient, therefore, elimination of the hazard is preferable to dependance upon the human element and human habits of forgetfulness.

D—We are also responsible to various governmental bodies who have jurisdiction over public utility operations. Inasmuch as we are necessarily semi-monopolistic in character, we are responsible to these regulatory bodies for operating efficiently, economically and safely.

The Public Service Commission is concerned with the safety as well as the cost and continuity of our service. The Workmen's Compensation Boards are constantly looking after the interests of the worker to insure that he receives all the benefits to which he is entitled under the law. (Incidentally, the weekly maximum in New York State was increased from $28 to $32 on July 1, 1948.)

Safety is an integral part of gas manufacturing and distribution operations and should, therefore, receive the same attention and interest given to the other phases of the company operation. Safety has to be applied by the production staff, even though it may be administered by Safety Directors or Safety Committees. Somebody must keep the records, stimulate the training program and give accident prevention work the specialized attention it requires to succeed. But in the last analysis, accidents are prevented by the way the men at the ovens or at the water-gas sets do their work under both normal and peak-load conditions.

To get both executives and employees behind a safety program, the top executives must be convinced of the need for such a program and *he alone* must convince his subordinates. Such convictions will come to him only after he fully understands what his accident losses really are, how they affect efficiency and what safety means in terms of production and sound employee relations.

Two of the best possible evidences of the top executive's sincerity are, of course, his willingness to assign responsibility to good men and to give them the authority to carry it and a willingness to spend money to make needed improvements of the plant and equipment. The "grapevine" quickly reaches every employee in the plant with the word that only lip service is required or on the contrary, that accidents must be stopped and accident causes found and eliminated.

The experience of dozens of the country's most efficient and progressive gas companies has proven that top management can give full and unqualified support to the safety program. If, on the other hand, the top executive does not see the reasons for a sound accident prevention program in the company, no one else is likely to see them either and wasteful accidents will continue and employees will continue to be killed needlessly.

To summarize — there are three reasons why top management should support the safety program:—

1—A good accident experience for the hazard involved demonstrates that both plant processes and plant personnel are under control, on the other hand, a poor record indicates that management is not meeting its responsibilities to the public, the stockholders, the employees or the governmental bodies.

2—Since accidents can be controlled, it is evident that accident losses unnecessarily lower overall production efficiency. This "accident tax" may very well mean the difference between ending up in the red or in the black ink column.

3—Another reason — and this is extremely important today—Safety is the one remaining common ground between management and labor. Both groups have a definite interest in the safety program and both have the same goal—to make a profit from the work output of the employee. It is, of course, management's responsibility to initiate, promote and enforce safety rules and regulations, however, the employee has the greatest interest in his own personal safety since it is his or her life that may very well be in jeopardy.

Accident Costs

In these days of rising costs of fuel, equipment and labor, it is well for all of us to take another look at the large amount of money that is being wasted through accidents. At first thought, the amount of compensation may not appear to be an important item but when the hidden cost is added to the actual cost, the total assumes staggering proportions and is an extremely important item of operating costs.

The fact that four-fifths of the accident cost is hidden does not change the result. This is an important principle of accident prevention. Compensation and medical losses are only a minor part of the total loss. These are known as direct costs, i. e., money paid to employee or physician following an injury by the insurance company or the employer if self-insured. The so-called indirect costs are those which result from lost time of employee, time lost by other employees, time lost by supervisors, cost of first-aid materials and services, damage to machinery, cost of continued wages in full while employee is on limited duty assignment and dozens of other items which are not easily identified but which are very real just the same. Heinrich estimates the hidden cost to be four to one that of the direct costs. In a recent study of accident costs in Consolidated Edison we found that the average compensation cost per lost-time accident was $332.00—the average medical cost $163.00 — and the company contribution over legal requirements was $124.00—or a total for all three direct costs of $619.00. If we apply the 4 to 1 ratio to this sum we find that the average lost-time accident cost approximately $3,100.00.

Accident Experience

The gas utility industry in the United States had 21.62 disabling injuries per million manhours of work exposure in 1947. This represents an increase of 12% over the rate of 19.34 in 1946 which was a 22.13% rise over the previous year (1945).

The severity rate (number of days lost per 1,000 hours worked) showed a slight increase 1.13 in 1946 to 1.24 in 1947. This was primarily the result of an increase in fatalities from 26 in 1946 to 32 in 1947.

It is a fact that all industries on the whole have had adverse accident trends following the recent World War. During the war every one had the same incentive to work safely in order to help win the war. We contributed our best efforts toward the war effort which included working safely. That incentive does not exist today and there is not the same unity of purpose to prevent accidents such as existed during wartime.

Accident Records

Accident records are just as essential to an efficient gas production operation as are records of costs, sales and profits. Accident prevention work cannot be carried on by guesswork. Accident facts are necessary in order to know just what are the things we are trying to prevent from occurring or reoccurring.

The basis for all accident records is a full and complete accident report, resulting from a thorough investigation of the accident. This does not mean that no-injury accidents should be ignored just because there is no compensation report required. The alert plant manager will "ask his subordinates for the answers" in all accidents and then take the necessary steps to find and eliminate their causes.

Accidents involving injuries are recorded, summarized and analyzed in accordance with the "American Standard Method of Compiling Injury Rates" (Z-16 Code A.S.A.) Prior to the adoption of this American Standard, accidents were classified and time charges were made in accordance with the compensation laws existing in each of the 48 states and the provinces of Canada. Since all states differed in certain aspects, it was impossible to make comparisons of accident experience, hence the adoption of the American Standard.

Safety Training

It is fundamental in accident prevention that employees be properly trained to do the job that is expected of them. It is a fact that people get hurt when they do not understand the hazards of methods of operating water gas sets or coke ovens or automobiles. It is management's responsibility to train the worker to do these things efficiently. Generally speaking, the philosophy underlying all management training is that the job of a training staff is to help the operating people solve their problems. Training for training's sake is costly and unnecessary.

Safety training should be included in the induction procedure to insure that the new employee may be given a complete understanding of the company's attitude toward safety. It is a serious mistake to provide an elaborate safety induction outline and then fail to follow through in actual practice at the plant. The employee is quick to realize whether or not the plant superintendent is safety-conscious or merely pays lip service to the safety program. If he is placed in a department where housekeeping is "sloppy" or where the safety rules are not enforced, it is only natural for him to imitate his fellow-workers and take chances leading to injuries. In other words, the employee will work safely if the plant manager looks upon accident prevention as efficient procedure and not as a moral precept. *"Do as I say, not as I do."*

In the public utility business the majority of serious injuries and fatalities occur to employees with 15 to 25 years service records. This presents a serious training problem in that these employees already know

SYNTRON

100% Self-Contained

Gasoline Hammer

PAVING BREAKERS

Save Money and Time

Whether you're busting concrete, cutting asphalt, digging clay or shale, tamping backfill or driving ground rods.
100% self-contained units.

For descriptive folder—write to—

SYNTRON CO.

920 Lexington **Homer City, Pa.**

their jobs. The great majority of gas inhalation or electric shock fatalities last year occurred to the employees possessing the highest degree of skill and job know-how.

It is a sad demonstration of the old adage—"familiarity breeds contempt" for hazards. That is the reason we lose our "best men" and we will continue to lose them unless and until we start a program of re-educating them in the "facts of life" in a public utility plant.

Safe Design and Layout

It is a well-established principle of accident prevention that it is more efficient and economical to provide for employee safety in the original plant design and layout. It is important therefore, that design engineers have a thorough knowledge of the causes of accidents so that the necessary margin of safety can be engineered into the finished plant. In addition, it is highly important that all plans and specifications be reviewed by the safety engineer before such plans are finally approved. This part of the accident prevention program is much easier and cheaper than to alter or renovate once the structure and equipment have been completed. Also it will continue to pay dividends as long as the structure stands.

It is also essential that materials and equipment be purchased with safety in mind. Manufacturers have to compete for sales. If the purchaser of a circular table saw buys on price alone he will be quoted prices minus the guards. The plant purchasing agent then has temporarily saved a few dollars only to pay out hundreds of dollars in compensation later.

Machine guarding, of course, was safety's afterthought. Necessity as always, is the mother of invention. Before we started to guard machines we had to look at lots of mangled arms and legs. Men lost eyes from flying bits of steel and acid-splashes long before goggles were thought of. And we had crushed toes before we had safety shoes. So I would reiterate that it is particularly satisfying to those of us who have a direct interest in accident prevention, to realize that nowadays we have made considerable progress in "out-guessing" our accidents, by heading them off at the sources, as we say, through planning safety in design.

Safety is especially important now as we struggle with plans for plant expansion. The safety-minded executive has a wonderful opportunity to include safety in construction and design. We know that the drawing boards of the utility industry are covered with prints and plans for new buildings, new plants, new equipment and improved methods of production. You production people must see to it that safety is made one of the primary considerations in these plans.

Plant Safety Committees

The Safety Committee is the most efficient method of collecting and dispensing accident prevention information, therefore, plant Safety Committees are a necessary part of the safety program. These Committees serve two purposes: 1—the handling of questions of company policy, expense, revision of plant layout and design and 2—the discovery and correction of unsafe acts and unsafe conditions. Most successful safety programs include a top executive Safety Committee which sets the safety policy and supervisory committees at each level of supervision. These Committees function best when the head of the department or bureau assumes the job of chairman and personally follows through on every recommendation.

Much of the work of putting these practices into effect falls on the shoulders of the people in the Production, Technical and Chemical groups. You are the people who are responsible for the safe (efficient) operation of your respective plants. The safety people should not and cannot lay out work schedules, operate machinery or generally speaking, produce and distribute gas. The safety people can and will serve in a special capacity as advisers and technical consultants, as specialists in accident and fire prevention, to help you achieve your objective to the end that your employees continue to produce and distribute gas without accidental injury and that your operations show a comfortable margin of profit.

Finally, when we analyze the term "Safety" we find more than just "security or freedom from danger." It means an attempt to prevent the occurrence of wholly unnecessary accidents whether they result in injury or not. It means an honest and intelligent effort to curb and minimize recklessness and carelessness. It stands for the establishment of order in place of chaos in all walks of life. It stands for the defeat of fatalism with its theme "accidents are bound to happen" by substituting intelligent and prudent thinking in place of such blind pagan reasoning. It is emblematic of an economic, patriotic and humanitarian work being practiced by decent people everywhere.

Book Reviews

Gaseous Fuels. A digest of their Properties, Behavior and Utilization. Edited by Louis Shnidman: Prepared under the auspices of the Subcommittee of the Chemical Committee, Technical Section of American Gas Association. 370 pages 8½ x 11, cloth bound. Price $7.50 per copy. To members A. G. A., $6.

This volume is a successor to "Fuel-Flue Gases" published by the A. G. A. in 1940. The wide scope of this work should prove most valuable as a source of knowledge and reference. A comprehensive index gives ready access to the many subjects and technical items covered.

Chapers are as follows: I—Introductory; II—The Gas Laws; III—Fuel Gases; IV—Physical Measurements; V—Some Components of Fuel Gases; VI—Typical Uses of Gas Analysis; VII—Atmospheric Gas Burners; VIII — Interchangeability of Fuel Gases; IX — Controlled Furnace Atmospheres; X — Purging Principles and Practice; XI—Flue Gases; XII—Deposits in Distribution Systems, Housepiping and Appliances; XIII—Air and Related Atmospheres.

This volume is highly recommended for Technical men and managers in the gas field but also to students in colleges and universities. Many literature references append each chapter.

Register of the British Gas Industry. Annual of 430 pages, 8½ x 11. 1948 edition. Includes Directory, Technical and Advertising Sections with index to personnel and a Diary Section. Published by Arrow Press Ltd., 29 Grove Road, Leighton Buzzard, Beds. No publisher's price given.

The "Gas Journal" Calendar and Directory (British). Annual for 1948, 550 pages 8 x 6¼ inches. Published by Walter King Ltd., 11 Bolt Court, Fleet Street, London, E.C.4. A complete directory of personnel and British undertakings. Includes a section devoted to gas works practice with useful engineering tables and a manufacturers' directory. No publishers' price given.

A TEAM THAT'S HARD TO BEAT!

FAMOUS *Humphrey* QUALITY SMASHING SALES HELPS

You can make more sales and spend less time per sale when your prospects are "pre-sold" through Humphrey dealer advertising material.

Humphrey Sales Helps have been carefully prepared and attractively printed to furnish you with forceful sales stimulators for the profitable merchandising of Humphrey Quality Gas Appliances manufactured by the General Gas Light Company.

We will furnish you, without charge, all of the materials and ideas you need for a business-getting campaign . . . Broadsides, Folders, Newspaper Ads, Radio Spot Announcements, Electros and Sales Information.

Write today for the Portfolio of Sales Helps illustrated below — the first step toward more profits.

GENERAL GAS LIGHT COMPANY,
Kalamazoo, Michigan

Please send the Humphrey Portfolio of Sales Helps.

Name_____

Address_____

City_____ State_____

GENERAL GAS LIGHT COMPANY KALAMAZOO MICHIGAN

23 WARREN ST., NEW YORK CITY — 2nd UNIT SANTA FE BLDG., DALLAS — 225 ELEVENTH ST., SAN FRANCISCO

Every *GAS* Refrigerator *helps insure*

You Install . . .

your cooking load!

Every Gas Company executive knows that his "profit load" lies in the homes of his community. It is the family's everyday use of gas that yields the best return to the Gas Industry. It is also in the home, however, that competition is fighting its fiercest battle to replace gas as America's number one fuel. At present, most Americans are still "cooking with gas." The gas ranges in 24,000,000 homes are proof of that.

And today, aggressive Gas Companies are taking definite action to *safeguard* this home cooking load. One of the most important protective steps in this effort is the all-out sales promotion of the Servel Gas Refrigerator to every gas range owner. *For experience proves that families that use gas for refrigeration are the poorest prospects for ranges using other types of fuel.*

Besides helping to insure your cooking load, Servel dramatizes the modernity of gas as a fuel. It offers silent operation, longer life and other exclusive benefits no other refrigerator can match. And its dependable, trouble-free service wins and holds friends for gas . . . helps pave the way for more and more All-Gas kitchens.

Servel also builds NEW load!

Protecting your established load is only part of the job the Gas Refrigerator does for you. Servel also *increases* your load where it counts most—in the high-rate bracket. And this new load is *all plus*, too, because it replaces no existing load.

Unlike most gas appliances, Servel operates continuously. This means steady, profitable load day and night . . . from January to December. Another thing, the installation of the Gas Refrigerator requires virtually no capital outlay for piping or mains. Adding this new, constant load to your lines involves no extra investment on your part.

Step up Servel promotion in your area

Servel's "gas load insurance" plus increased load is a good reason why you'll want to give the Gas Refrigerator your full promotional support during the coming months. For the latest information on promoting and selling the Gas Refrigerator, write to Servel, Inc., Evansville 20, Indiana.

Servel

The GAS Refrigerator

EVANSVILLE 20, INDIANA

Utility House Organs are Profit Makers

How the Smaller Utilities Can Issue House Organs Economically and Profitably

By
David Markstein

DURING the war, the Army, Navy and Marine Corps found that camp and unit newspapers were among the surest morale-builders. These papers — some of them very pretentious affairs — gave the service men news of their units' activities, told what their buddies were doing, explained service orders and regulations in terms of benefit to the individuals, and generally performed a pepping-up and selling job the extent of which can only be judged by the lengths to which the services went to insure publication of these papers.

There is a lesson in this for utility companies. Because the services found that, whether the service papers were simple mimeographed sheets (such as even the smallest company can afford to publish) or really professional and expensive jobs on the order of the *Stars and Stripes* and *Yank*, they did a vital job in selling the millions of citizen-service men on the importance of what they were doing.

The service papers were, essentially, house organs rather than free newspapers. They told what the services wished them to tell. They had a selling job to do—and did it.

House organs can perform the same sort of selling job for the utility company, selling employees on the company, and customers or dealers on the services offered.

Many utility executives, along with employers of every description, still regard house organs as a waste of money and effort. But they are not. Few utilities that have published company magazines report anything but delighted acceptance of their efficacy.

But how is the utility executive, whose operations often are not so large that he can afford a special department for publishing his company magazine, to put out a house organ?

Actually, it can be very simple. Let's look at how to do it.

First, consider the two types of company publications. Editors and advertising men refer to them as "internal" and "external" house organs. The internal publication is one that is aimed principally at the company's employees, to sell them the company, its policies, and the benefits of working for it. The external house organ is one that is published primarily for selling customers. It is a merchandising tool like any other direct mail advertising, but with the difference that it comes in the form of a magazine, newspaper or pamphlet that has a continuing format, and is mailed or given to the reader at regular intervals.

Some utility companies which operate on limited budgets have combined these two forms in a single company publication, part of which is designed for employee interest, part to interest and sell the utility customers.

Selection of Material

What should the internal publication contain in the way of editorial material? How should the editorial material be presented to make it interesting, so that the utility employees will take the time and trouble to read the magazine or newspaper? How can good editorial material be dug up?

The most important part of a house organ, as far as building readership among the employees is concerned, is "name" news. This is the old country weekly formula: pack in as many employees' names as possible.

Names, it is said, make news. One good way to pack a number of the employees' monikers into each issue is by means of departmental "columns." These can be gathered and written by one employee in each section who is given the assignment of writing up his colleagues' activities for the company publication.

It is a good idea, in doing this, to ask for a volunteer rather than "assign" an unwanted job to a man. The "reporter" thus chosen should be made to feel that his contribution to the house organ's success is a considerable one and that in working for the paper he becomes part of the management family.

Other specific ways in which to inject reader interest are the use of classified columns, cartoons, and especially interesting "spots" such as leg art photographs.

Classified Ads

A good example of how to build publication readership via a classified column is the house organ put out by one mid-western utility company. This company's newspaper sports a swap classified page. Employees are invited to put up anything they want to swap, much in the way that the daily newspapers' swap columns operate. No charge is made for the service.

Other house organ publishers have run for-sale departments, in which employees wishing to sell personal goods, household furnishings (sometimes even homes were put up for sale—and sold) could list their advertisements.

The Spot Cartoon

Readership surveys taken by large national advertisers have shown conclusively that the surest readership-builder is the spot cartoon. Newspaper and magazine readers have grown accustomed to them. Advertisers have employed them very effectively in cases when readership was the primary objective to be accomplished by the advertisement. And utility company house organ publishers can use them effectively to inject heavy doses of reader interest into their company publications.

"But," many utility executives say, "we have no artists on the payroll. How are we to secure cartoons?"

There are several art services in the country that specialize in furnishing stock cartoons to advertisers, publishers and house magazine sponsors. These cartoons come in standard one and two-column sizes, and can be secured in the form of mats or electrotypes, for charges ranging from twenty-five cents to two dollars. A partial list of the firms includes Cobb Shinn, 421 Union street, Indianapolis, Ind. and Knott Cartoon Service, of the same city.

But columns, cartoons and classified pages are not enough in themselves to make a successful house

organ. The meat of a publication is the articles it offers. What sort should the utiilty executive look for? How can he spot good story material?

Employees as Contributors

The employees themselves are the best feature material. Their spare time activities and hobbies often offer amazingly fertile article material. One may be a bowling champion. In that case, his sports history, the form he uses, and the tips he has to pass on, can be combined into a good yarn.

Another may have a prize stamp collection. A general yarn about stamp collecting and collection hobbies of all kinds can be built around his activities.

A third may have been a bombardier over Germany during the war. His experiences can make prime article material.

It takes system to ferret out these article leads, but the system can be a simple one.

One Southern utility company, when it began publication of an internal house organ, passed out mimeographed forms to every employee. These inquired as to the worker's interests and former employment, his spare time activities, sports interests, hobbies, etc. A study of the forms gave the utility executive an idea of where to find material. Following up the leads by personal interviews resulted in an endless supply of feature stories.

A house organ, however, is primarily a teaching and selling tool. So its editorial policy should be to bear down on selling the company and on teaching the approved procedures for doing things. This it can do best by tying to the successful formula of driving home a moral by example.

If a new procedure is to be taught, the best way is to tell—and demonstrate in photographs—how an employee does it.

Feature Company Policies

To sell the company, articles dramatizing how company policies have benefited employees are the surest procedure. If there is hospitalization, show how the insurance helped an injured employee. If there is an old age pension, show how another worker is living the life of Riley at the pension fund's expense. Dramatize the ways in which the company helps its employees.

The exterior house organ's editorial formula would be much the same. For readership attention-grabbers, there are the same tried-and-true, proven-effective gimmicks of cartoons and leg art.

For feature material, instead of dramatizing an employee, dramatize a customer. Finding the material here is even simpler than in the case of employees, because the utility company is in more or less constant contact with its customers.

The meat—which in the external house organ is the direct and indirect selling—can be built again, around how the utility has aided one of its customers.

An external house organ requires even more careful editorial handling than an internal magazine because, while each employee has some small share at least of natural interest in company doings, the customer can be assumed to have none at all. So the publication must carefully make each feature and each article newsworthy or packed with human interest for the reader to absorb the selling and institutional messages that the utility executive wishes to drive home.

House organs take many shapes: newspapers, magazines, news letters, or sometimes simple mimeographed sheets.

Whether they are pretentious affairs or inexpensive ones, it has been proven on the tough field of competitive operations that house organs are profit-makers.

Hydro-Scavenger

DRIP TRUCK

Removes Condensate From Drips
Opens Clogged Service Leads

28" Hg Vacuum For Loading
25 Lbs. Pneumatic Pressure For Unloading

The Material Does Not Go Through The Pump
A Flexible Machine! Available ANY SIZE!
Special Features Easily Incorporated
Gasoline Engine or Power Take-off
Write For Additional Information

This Trailer

Utilizes Vacuum and Pressure Alternately For Cleaning Stubborn Service Lead Stoppages.

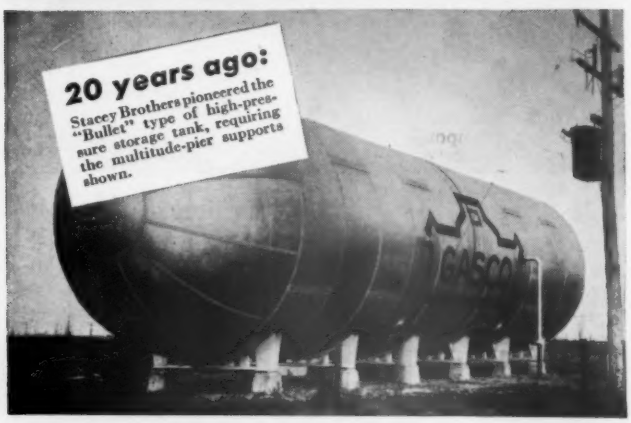
A Money Saver!

WHITTINGTON
Pump & Engineering Corp.
1126 Prospect St.
Indianapolis 3, Indiana

Progress IN HIGH PRESSURE

NOW!
Stacey Brothers announces A-frame center-suspension. Combined with all-welded construction, it gives you the simplest, safest in high-pressure storage tanks.

10 years ago:
Stacey Brothers pioneered the use of all-welded construction in the unique Stacey Brothers "Bullet" and four-pier suspension.


20 years ago:
Stacey Brothers pioneered the "Bullet" type of high-pressure storage tank, requiring the multitude-pier supports shown.

PIONEERED BY STACEY BROTHERS

Here's definite progress in the high-pressure storage field. Forget about expensive foundations, distortions from welding and leaks due to pressure changes—the new Stacey Brothers center-suspension construction takes care of that. Operation is easier, too—with less maintenance.

Designed and erected so that all field welding is done in a "down-hand" position for capacities up to 500,000 cubic feet—and pressures up to 100 pounds—you can't find a safer, more satisfactory, more *sightly* storage tank than the famous Stacey Brothers "Bullet". We've been building them for more than twenty years—both horizontal and vertical styles—for gases or liquids.

Like more facts? Tell us the size and pressure you need—we'll do the rest. No obligation, of course.

STACEY BROTHERS GAS CONSTRUCTION CO.
One of the Dresser Industries
5535 VINE STREET • CINCINNATI 16, OHIO

Stacey Brothers TANKS

Recent Court Decisions
Affecting Gas Utilities

New Law of Gas Contracts

By
Leo T. Parker
Attorney at Law
Cincinnati, Ohio

RECENTLY a reader wrote an interesting inquiry, as follows: "We have a law suit on our hands. Can you assist to win this suit on a contract? Our company contracted in writing to purchase at a stated price from a producing company all the "merchantable" gas the latter could produce. Now the producing company refuses to deliver any gas on the contention that the contract is ambiguous and void because no one can decide what gas is merchantable. Is this contract valid?"

Yes, the contract is valid and your company can compel the producing company to deliver at the named price all the usable gas the company can produce.

First, before reviewing several carefully selected higher court decisions designed to assist this reader to win the suit, we shall briefly explain the necessary elements of a valid contract. *All* contracts are valid and enforceable if each of the following questions can be answered in affirmative: (1) Did one contracting party submit an offer which the other party unconditionally accepted? (2) Is the object or ultimate purpose of the contract lawful? (3) Did both parties act honestly and neither party misrepresent facts? (4) Were both parties of legal age, of sound mind, and with proper and legal authority to make the contract? (5) Did both parties agree absolutely to perform definite obligations? (6) Are the obligations assumed by parties to the agreement clear and not ambiguous.

Apparently the contract to which our reader refers meets requirements of the first five of these stipulations. Hence the outcome of this suit depends on the answer to No. 6 stipulation which is: Are the obligations assumed by parties to the agreement clear and not ambiguous?

All courts agree that an ambiguous contract is valid and binding if the *intended obligations* assumed by both contracting parties may be determined. In other words, the obligations of parties to a contract depend entirely and absolutely upon the obligations they *mutually intended to assume at the time* the contract was signed. If the court can construe these obligations the contract is valid and binding although apparently it is ambiguous, and *on its face* only one of the contracting parties was definitely obligated to perform a specified act.

For illustration, in the leading case of Southwest Pipe Line v. Empire Natural Gas, 35 F. (2d) 248, the validity of a contract was litigated which contained a clause, as follows:

"The undersigned vendors (pipe line company) . . . hereby agree to sell and deliver and the vendee (gas company) agree to receive . . . all the merchantable gas in its natural state produced from wells now drilled and hereafter to be drilled. . . ."

The gas company contended that the contract required it to take only so much gas as it desired to take, since the quantity of gas it intended to purchase was dependent upon its business needs. This court said:

"The uncertainties of the contract arise by virtue of the limitations upon and exceptions to the agreement to take all 'the merchantable gas in its natural state as produced'. . . . It is well established that such contract cannot be enforced, if the will, wish, or want of one of the parties determines absolutely the quantity to be delivered. . . . If the quantity, however, is 'ascertained otherwise with reasonable certainty,' the contract can be sustained. . . . It is an agreement to take all the merchantable gas in conformity with well established and approved practices in the industry. . . . The contract is not void for want of mutuality."

Therefore, this court held the contract valid and enforceable with the further stipulation that the contract clearly indicated that it was *intended* to obligate the gas company to take *all of the* "merchantable gas" produced by the pipe line company. This court also stated that the exact meaning of the term "merchantable gas" can be proved by testimony of experts in the gas industry who will know the quality of gas that is recognized as being salable for intended purposes of the gas company.

Quite obviously if the court could not have determined the quality and quantity of gas sold under the contract, the contract would have been declared void. This is true because if the quantity of salable merchandise cannot be determined by same means such contract is void irrespective of other provisions.

The quantity need not be defined, but a basis for determining the quantity must be available. In this case the quantity was "all the merchantable gas in its natural state produced from wells now drilled and hereafter to be drilled" by the pipe line company. The fact that experts in the gas industry can readily designate what gas is "merchantable" results in the quantity of gas purchased by the gas company being capable of definite establishment or determination. Hence, the contract is not ambiguous and therefore valid.

Another good example of the law that a court will decide a contract litigation solely on original intentions of the contracting parties is Henderson Development Company, Inc. v. United Fuel Gas Company, 3 S. E. (2d) 217. It was disclosed that a development company owned eleven oil and gas leases, and three gas wells thereon producing gas in paying quantities. The development company entered into a contract with the Charleston Natural Gas Company. The contract stated that the former "has sold and does hereby sell unto" the gas company all the *natural* gas which the development company *may produce.*

The contract was for five years and

so much longer thereafter as gas is produced in paying and marketable quantities from the lands described in the contract.

After the contract was signed five wells, in addition to the original wells, were drilled by the development company. Then the development company requested the gas company to connect lines with the new wells located eight miles distant. The gas company refused to do so, and the development company filed suit and asked the court to compel the gas company to fulfill the terms of the contract.

However, the testimony proved that when the contract was signed both the gas company and the development company intended to contract for gas produced from *existing* wells. Therefore, the higher court refused to compel the development company to connect the new wells with the gas company's line. This court said:

"A cardinal rule in the construction of a contract is that its main object, or the purpose which the parties sought to accomplish, is to be considered in ascertaining their intention, and particular parts of the contract must be so construed as to harmonize with such purpose, if possible. . . . It seems clear from the foregoing that the contracting parties never intended to include wells eight miles distant from, and without intervening development connecting it with, the original development. . . . The parties to a contract are presumed to have used the words in the instrument in the sense in which they are generally understood."

Hence, the court construed the contract in accordance with the original intentions of the parties at the time the contract was signed.

And again see Ford Realty Company v. City, 164 N. E. 62, where a realty company filed suit against a city to recover $16,644 which the company paid for installing mains in the streets of a village.

The original contract between the village and the realty company provided that the latter should install the mains, and make all connections without any expense of any sort or kind to the village, and that the title to the equipment and mains installed by the realty company was to remain with the latter.

Subsequently, the village was incorporated as a part of a city and the realty company contended that the city was obligated to pay for the equipment and mains because the original contract provided that the title to the equipment and mains should always remain in the realty company.

However, the court held the city not required to pay for the pipes and other equipment installed by the realty company, saying:

"The pipes that were laid by the Ford Realty & Construction Company were for the purpose of enhancing the value of their own allotment, and, undoubtedly, the enhanced value of the lots was charged against the property owners who purchased lots in this allotment, who probably would not have purchased them but for the installation of the pipes."

In other words, this court construed the original contract between the village and the realty company to mean that at the time it was signed the latter never intended to receive any payment for the equipment and mains.

Mutual Obligations

Both parties to a contract must agree to do something, or the contract is void. A most striking example of this rule of law is supplied by White v. Willis, 168 S. W. (2d) 178. Here a written contract contained an opening clause, as follows: "The first party, purchaser, agrees to purchase . . ." The contract was very complicated and complete in all other details except that it did not recite that the seller agreed to sell. Although both the buyer and seller signed the contract the higher court held it void for want of mutuality.

For comparison, see Sharpless v. Kirk Gas Company, 280 Pac. 788. Here it was shown that an efficiency engineering company signed a contract with a gas company by which the engineering company agreed to send experts to thoroughly inspect the gas company's properties. The gas company agreed that when the experts arrived on its properties, it would sign a contract giving the efficiency engineering company an option to purchase its property for $1,100,000. The engineering company sent the experts to inspect and appraise the property, but the gas company refused to sign the promised option and subsequently sold its property to another company for $1,250,000.

The engineering company then filed suit against the gas company for breach of the contract.

Since the gas company was obligated to do nothing unless the engineering company sent its experts to appraise the properties, and the engineering company only promised to do so, the court held the contract void because the obligations were not mutual, and said:

"Where the consideration for a promise of one party is the promise of the other, there must be absolute mutuality of engagement, so that each party has the right to hold the other party to a positive agreement. . . ."

So, therefore, a mere promise is not valid consideration so as to render a mere agreement of valid contract.

Statute of Frauds

The Statute of Frauds plays an important role in all states. It provides that certain kinds of contracts must be in writing. A contract which fails to comply with the Statute of Frauds always is void. All contracts relating to real estate must be in writing.

In Womack v. Madison Company, 24 So. (2d) 256, it was shown that an employe named Womack became interested in buying a home. To aid him in the venture his employer became an indorser upon a $2,000 note made by Womack to the First National Bank, by means of which Womack procured $2,000 to make first payment on a home. By the terms of the note the loan was to be repaid to the bank by Womack in installments of $48.33 each month. In subsequent litigation the employer alleged that Womack *verbally* promised that if he were unable to make the agreed monthly payments to the bank he would "sign over" the property to the former.

After purchasing the property Womack made only four monthly payments to the bank on the loan. Thereafter he discontinued making the payments. By reason of the indorsement the employer was compelled to pay the note to the bank. The employer requested Womack to comply with the verbal agreement and sign over the property. Womack refused and the employer filed suit, and asked the court to compel Womack to fulfill his verbal agreement.

The higher court refused to hold in favor of the employer.

Also, all contracts are void which cannot be performed within one year. See Kelly, 132 S. W. (2d) 46. This court held that a seller cannot recover damages on a verbal contract which was to be performed over a period of three years.

For comparison, see 146 Fed. (2d) 121, where it was held that if a buyer and seller *correspond* regarding a verbal contract, and arrange details, by correspondence, the verbal contract is valid because it takes the legal status of a written contract.

Cannot Be Varied

Modern higher courts consistently hold that a written contract cannot be varied or changed by verbal agreements. This law is particularly applicable if the written contract contains a clause that the contract is the "complete" agreement.

For illustration, in Hardin v. At-

lanta Gas Light Company, 30 S. E. (2d) 121, it was shown that a property owner and a gas company made a written contract by the terms of which the former agreed to purchase certain gas equipment. The written contract contained a clause, as follows:

"This instrument is the full and complete agreement between the buyer and seller."

Later the purchaser refused to pay for the equipment on the contention that when the written contract was made an authorized salesman of the gas company had verbally promised that the gas company would extend its lines so as to serve the buildings in which the equipment was installed.

The higher court held the purchaser bound to pay for the equipment although the gas mains had not been extended. This court said:

"The written contract declared that it contained the full and complete agreement between the parties, and the contract contained no agreement by the plaintiff (gas company) to extend any gas lines so as to accommodate the defendant's properties."

When Gas Company Is Liable

Generally speaking, a gas company is liable on a verbal statement or guarantee made by an authorized agent, under the following circumstances: (1) if no written statement contradicts the verbal agreement; (2) if the gas company's officials know the intended uses of the subject of sale; (3) if no written or verbal guarantee is made; (4) of no clause in the contract prohibits a guarantee; (5) and the verbal contract can be performed within one year.

Implied Warranty

According to a recent higher court a seller may be liable on an "implied" guarantee although neither the company nor its agent guaranteed the equipment.

See Walston v. Whitley & Company, 39 S. E. (2d) 375, where one Walston purchased from a company certain gas burning heating and drying equipment. Before making the purchase contract Walston explained to the company's agent that he was a grower of tobacco and was unable to procure wood to cure his tobacco, and that he wanted heaters that would properly cure his tobacco.

Later Walston sued the company and the salesman to recover damages based on breach of an implied warranty, Walston alleged that the heaters failed to cure his tobacco crop properly, and within a reasonable time, although he purchased the heaters when relying on the skill and judgment of the seller with respect to the capacity and efficiency of the heaters. Walston also proved facts, as follows: The heating equipment would not generate more than about 100 degrees of temperature; whereas, about 180 degrees of temperature are required for proper and efficient curing of the tobacco.

The testimony proved that neither the seller or his agent had guaranteed the heaters. Nevertheless the higher court held the seller liable in damages to Walston for breach of the "implied" warranty, and said:

"The alleged representations and warranty went to the quality and capacity of the machines purchased, and were in effect a representation of their essential character, such as have, with marked uniformity, been regarded as warranties for the breach of which damages are recoverable."

However, the higher court refused to hold the seller's salesman liable and said:

"Ordinarily, an agent is not liable in an action by a third party (purchaser) for breach of warranty upon a sales contract in which he has acted fully within his authority or within its apparent scope, and contracted only in that capacity."

For comparison, see North Carolina Company v. Spears Company, 192 N.C. 377. Here the higher court explained that an agent *will be held* personally liable on a contract if he failed to disclose to the purchaser the identity of his employer. This court also held that an agent or salesman who contracts for a *disclosed* manufacturer or employer, and within the scope of his authority, is *not* personally liable if the manufacturer breaches the expressed or implied contract.

Market for Carbon Briquets in Portland, Oregon

Portland Gas and Coke Company finds a ready market for briquets. Made from carbon produced during the gas-making process, Gasco Briquets are high in heat content and leave practically no ash when burned.

Briquets are formed under pressure as the carbon passes between stainless steel rollers which have pocked-shaped molds on their surfaces. Conveyors then carry the briquets through a starch bath to give them a glaze. Next they are sacked for local delivery or loaded in bulk for shipment by rail.

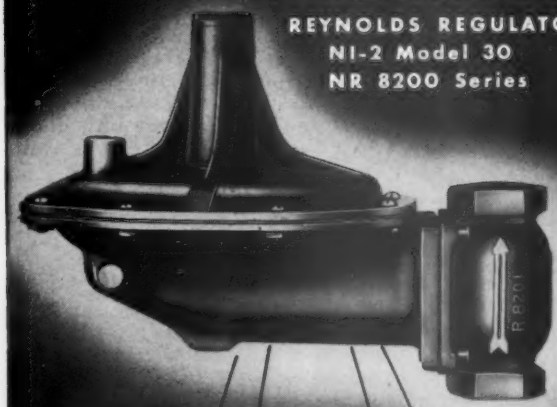
Annual production now exceeds 100,000 tons, approximately 70 per cent of which is consumed in the Portland area. They were introduced in their present form in 1932.

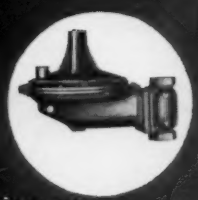
Consult us-
FOR
EXPERIENCE IN SOLVING
YOUR PROBLEMS OF
GAS STORAGE AND
PROCESSING EQUIPMENT
Consulting with us does not obligate you--but we do want to acquaint you with STAMANCO'S record of past performance--a record that has always been outstanding, from the dawn of the Gas Industry in America right up to the present. It's a record that will guide you to the most dependable equipment for YOUR needs.
Shown at the left is a STAMANCO Gas Holder recently installed in Florida. All-Welded Panel construction; capacity 150,000 cu. ft.
STAMANCO
WET SEAL
GAS HOLDERS
The STACEY MANUFACTURING Co.
SINCE 1851
CINCINNATI 16, OHIO
GAS HOLDERS • HI-PRESSURE TANKS • PURIFIER BOXES
ENGINEERS • FABRICATORS • CONSTRUCTORS
An Independent Organization Not Affiliated With Any Other Builders of Gas Holders

4 INSTALLATION POSITIONS

...for easy connections
Spring Top operates pointing either up or down

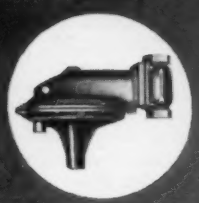
REYNOLDS REGULATOR
NI-2 Model 30
NR 8200 Series





Vertical Position with down flow

Vertical Position with up flow



Inverted Position for use where accumulation of water is problem

Horizontal Position with flow left to right or by changing setting 180° with flow right to left

1. This regulator is available with any type seal previously made by Reynolds.
2. Quickly installed in existing house piping.
3. May be installed in any position on a 90° setting.
4. Orifice can be changed at any time.
5. To inspect orifice or valve pocket, only an Allen wrench is needed.

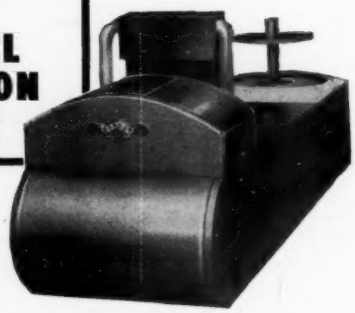
Reynolds

GAS REGULATOR CO.
ANDERSON · INDIANA · U. S. A.

WRITE FOR DETAILS

GORDON

DUAL-FUEL CONVERSION BURNER



Here is a revolutionary combination oil-gas burner utilizing the Gordon Spreader Flame principle. Automatically switches to oil when outside temperature drops to predetermined point. Eliminates PEAK LOAD HEADACHES for utilities as well as low pressure periods for users. Opens enormous market in domestic heating field. Has maximum input capacity of 165,000 BTUs. Write for descriptive bulletin TODAY!

ROBERTS-GORDON APPLIANCE CORP.
137 Arthur Street • Buffalo 7, N. Y.

"The Gem of Them All"

COLUMBIA CONVERSION GAS BURNERS

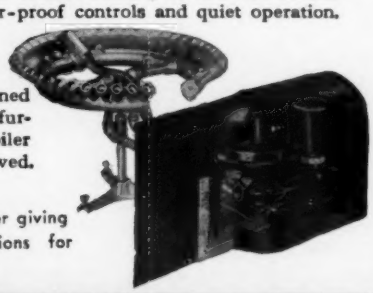
More Popular Than Ever

With Home Owners and Dealers

DEALERS SAY—Columbia Nutipe Burner has a common sense design. Closely duplicates operation of appliance when solid fuel was used. Easy to install. Seldom requires service.

HOME OWNERS SAY—Gives quick heat transfer and earlier delivery of heat to rooms. Has tamper-proof controls and quiet operation.

MODEL P-ZE shown here is designed for use in warm air furnaces or round type boiler where grates are removed.



Send for free folder giving complete instructions for installing

THE COLUMBIA BURNER CO.
729 Ewing Street • Toledo 7, Ohio

Underground Storage of Natural Gas and Propane

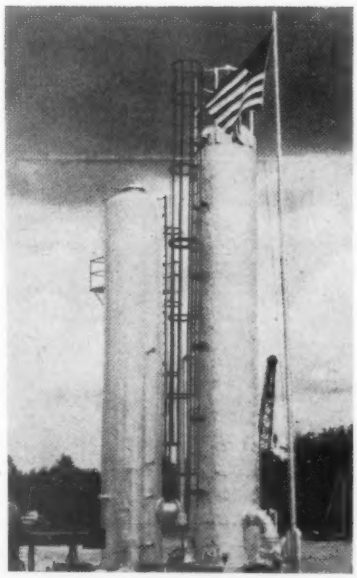
Consumers Power Company Stores Both in Mixed Form to Meet Winter Demand

MICHIGAN Gas Storage Company, subsidiary of Consumers Power Company was organized as part of a broad plan to assure Consumers Power customers a plentiful supply of gas through underground storage in the northwest part of Clare County, Michigan, about 70 miles northwest of Bay City. Pipe lines and Compressor stations form part of the project. Operations began in mid-July.

Underground storage of propane gas, something new in the gas industry, is the most important of several steps taken by Consumers Power Company and Michigan Gas Storage to offset shortages in pipeline deliveries of gas from Texas and thus avoid the necessity of interrupting service to industrial customers during the coming winter. These special steps will cost the Company $3,000,000 which is about $1,600,000 more than the same amount of gas would have cost under ordinary conditions.

A procession of 1,200 railroad tank cars bringing liquid propane from Texas is filing over the Company's new siding at Pennock, an old timber camp station a mile and a half north of Temple. Arrivals are scheduled at the rate of 12 cars per day for a 100-day period ending Oct. 15. Then there will be a six-weeks interval, after which three cars a day will come in throughout the winter.

A 30,000-gallon receiving tank and equipment for unloading the propane have been installed at the siding. The liquid propane is withdrawn into the receiving tank, then pumped four and a half miles to another 30,000-gallon tank at the Company's Muskegon River Compressor Station in the Winterfield storage area.



One step in preparing the liquid propane for storage underground is that of mixing it with heated natural gas and air. This is done in the tower at the right. All natural gas from Texas, Kansas and Oklahoma which goes into the storage field passes through this tower mixing with air and propane and thence into the storage field.

Mixing Operation

To this point, the propane remains in liquid form. When it leaves the second receiving tank it is pumped through heat exchangers, where its temperature is raised to the vaporization point. Then it is transferred to a tower to be mixed with heated natural gas and air. In its gaseous form the propane contains 2,526 heat units per cubic foot. The combination of natural gas and propane gas that leaves the mixing tower has the standard natural gas Btu content —1,000 per cubic foot.

This mixture is introduced into the regular stream of natural gas flowing into the storage field through pipelines from the Hugoton field in Texas, Kansas and Oklahoma. It then is carried under pressure into the underground formation of the field. The underground storage area consists of a sandstone stratum from 1,300 to 1,400 feet below the surface. This sandstone is about 15 per cent porous.

1,300,000,000 Cubic Feet

The 1,200 railroad tank cars in the original procession will bring 12,000,000 gallons of liquid propane. This will be converted into the equivalent of a billion cubic feet of natural gas. Tank cars arriving between Dec. 1 and April 1, will bring the equivalent of an additional 300,000,000 cubic feet.

Liquid propane is being obtained from various parts of Texas. It is

CRUSE-KEMPER COMPANY
AMBLER, PENNA.
GAS HOLDERS
Low Pressure High Pressure Inspection
Purifiers Tanks Flues
Over 40 Years of Sound
Steel Plate Construction

produced in either of two ways—by extraction from natural gas or as a by-product in oil refining processes.

Purpose of the storage project is to build up a reserve of gas against next winter's needs. The propane gas now going underground will emerge a few months hence and travel via pipelines to communities supplied with natural gas by Consumers Power Company. The percentage of propane gas in the mixture delivered to the customer will be small, never exceeding 15 per cent.

Influence on Rates

The Michigan Public Service Commission has authorized Consumers Power Company to "pass along" to larger users of natural gas part of the extra expense involved in emergency steps to reinforce the gas supply and thus minimize the possibility of factory shutdowns and unemployment next winter.

It has arranged to obtain eight to ten million cubic feet of gas per day from the Howell Field, from which only four million feet a day was obtained earlier.

It has made an agreement with the Michigan Consolidated Gas Company of Detroit under which Michigan Consolidated will turn over a total of 100,000,000 cubic feet of natural gas to Consumers. Our Company will pay with enough propane to enable Consolidated to manufacture an equivalent amount of gas in Detroit.

These several emergency steps involve an expenditure of about $3,000,000, or about $1,600,000 more than the same amount of gas would cost if obtainable through the usual sources of supply.

The MPSC ruling will enable the Company to pass along this $1,600,000 of extra expense to its larger customers during the eight months beginning with August and ending with March.

Customers using no more than 2,500 feet of gas per month will not be affected, since the first 2,500 feet of each customer's monthly usage is exempt. This means exemption for practically all domestic customers whose use of gas is confined to cooking and water heating. Usually 2,000 feet a month will cover these uses.

Other customers—industrial, commercial and house-heating—will pay a surcharge of about 14½c per thousand cubic feet on gas used in excess of 2,500 cubic feet a month.

About 97,000 customers will help pay the extra cost. About 177,000 will not be affected.

Communities affected include Flint, Lansing, Saginaw, Bay City, Pontiac, Midland, Jackson, Kalamazoo, Owosso, Royal Oak, Mt. Clemens, Marshall, Alma, Hastings, Ionia and more than 200 others.—*Consumers Power News.*

INSTALL UNDERGROUND LINES
FASTER-CHEAPER-
with an Earthworm
Only EARTHWORM
Has All These Features
1. Boring hole (not pushing) assures accuracy.
2 Fast—will bore hole for average service in 8 to 20 minutes. Bores 1½" to 5" hole.
3. Minimum street opening—saves digging.
4. One or two main operation.
5. Safe—manual feed warns of existing lines.
6. Complete portable equipment—no auxiliary equipment required.
Three models—1.2, 2.3 or 4 H.P.
Write for full Information
Mailing Address: Box 1100
Earthworm
BORING MACHINE • MANUFACTURED BY LUBE JACK CO., SANTA MONICA, CALIF.

Pipe Flanges and Fittings —Standards and Symbols

American Standards Association, through Sectional Committees, has in preparation, standards to be adopted for pipe flanges and fittings (B16) and for graphical symbols and abbreviations for use on drawings (Z 32).

Dr. E. LaCrosse, vice-president and director of engineering of the Stone & Webster Engineering Corporation, has been named chairman of the Sectional Committee on Standardization of Pipe Flanges and Fittings. Dr. LaCrosse represents the American Society of Mechanical Engineers, one of the three sponsors of the project. Lester W. Benoit, general secretary of the Manufacturers Standardization Society of the Valve and Fittings Industry, who represents the Society on the committee, has been named secretary.

A new list of members of the sectional committee submitted by the sponsor organization to the American Standards Association for review and approval was approved by the Mechanical Standards Committee. The scope of the project was reaffirmed as covering standardization of dimensions, designation of materials, and pressure-temperature rating of pipe flanges, pipe fittings for pipes carrying steam, gas, air, water, oil, ammonia, etc., other types of fittings attached to pipe, and standardization of face-to-face dimensions of ferrous gate, globe, angle, and check valves.

The subgroup on heat-power equipment symbols is now circulating a list showing heat-power apparatus equipment symbols to industry for comment.

Two proposed American Standards—Graphical Pipe Fittings, Valves, and Piping Symbols for Use on Drawings, Z32.23, and Graphical Heating, Ventilating, and Air-conditioning Symbols for Use on Drawings Z32.24—are both before the sectional committee for approval.

Another proposed American Standard, Graphical Plumbing Symbols for Use on Drawings, Z32.22, has been submitted by the sectional committee to the sponsors.

De Laval Appoints Greenland Dist. Mgr. at Seattle

Officials of the De Laval Steam Turbine Company, have announced the appointment of J. A. Greenland as District Manager of the De Laval Seattle Office. Graduated from Rose Polytechnic Institute in 1938, Mr. Greenland joined the company, and was for some time associated with its main office in Trenton.

Large Volume Water Heating

By

Malcolm B. MacKay

The Burkay Company

CHAPTER IX—PART 1

REVISED MASS FEEDING HOT WATER REQUIREMENTS

SINCE the preparation and publishing of the data covering the Hot Water Requirements for Mass Feeding in Restaurants and other Food Establishments which was presented in Chapter *V* of this series of articles on the subject of Large Volume Hot Water Demand, recent developments in the field of Sanitation and Public Health have established the necessity for revising the factors representing both the average *per person per meal* hot water demand and the Sanitizing Rinse (170° to 180°, F.) flow rate for Spray Type Dishwashers established in Part 1 of Chapter *V*. It has also been necessary, for resulting reasons, to revise the *per person per meal peak period (dishwashing period) hot water demand factor,* established in Part 2 of Chapter *V*, and the *per person per meal peak hour hot water demand factors*—based on the length of the dishwashing period—shown in Figure No. 6.

The increasing emphasis—on the part of public health authorities—on the necessity for employing hot water at a temperature of from 170° to 180°, F., for the sanitizing rinse, after washing, of all tableware used in the public serving of food and drink, and the results of recent studies of mechanical dishwashing by the National Sanitation Foundation have, to date, revealed the necessity for supplying the sanitizing rinse water to single tank, door type dishwashing machines at a rate of flow greater than that which was formerly considered adequate for the satisfactory performance of the dishwasher. This increased rate of flow of rinse water necessary to accomplish more effective destruction of the harmful, oral borne bacteria which survive the washing operation is accordingly reflected in the increased per person per meal—per person per peak demand period—and per person per peak hour hot water demand factors shown later in this chapter.

(2) The importance which *hot water at sanitizing temperature* plays in maintaining acceptable sanitation standards in food service establishments is attested by the fact that the first project authorized by the National Sanitation Foundation was a complete study of dishwashing.

Briefly, the following facts have been established as a result of this study of Mechanical Dishwashing:

To obtain satisfactory bacteria kill, dishes must be rinsed for 10 seconds with 170° F. water. All hot water required for the Sanitizing Rinse of all tableware, after washing, must be delivered to the dishwasher by the water heater or water heating system at a temperature of 180° F., as the dishes must be rinsed with 170° F., water to obtain satisfactory bacteria kill.

To better visualize the necessity of supplying 180 degree *rinse* water at an *adequate rate of flow* let us examine the four basic types of commercial, *Spray-type* dishwashers. We must recognize the fact that the *rate of flow* of the required 180 degree rinse water is equally, if not *more important* than the total hourly requirements.

(3) All Spray Type machines come under one of the following classifications:

(a) *Single Tank, Door Type*—In this type of dishwasher the washing solution is recirculated by a pump and delivered through nozzles above and below the racks or trays containing the dishes. Subsequent to the washing operation in the One Position, Door Type Machine, the 180 degree sanitizing rinse, manually or automatically controlled, is introduced through independent spray nozzles above and below the dish rack or tray while it is in position above the wash tank.

The necessary increase in the rate of flow of sanitizing rinse water required by single tank, door type dishwashers will also result in an increase in the hourly demand for rinse water for this type of machine.

The figures given in Part 1 of Chapter *V* for the hourly demand for 170° to 180° rinse water to supply the requirements of single tank, door type dishwashers should accordingly be *revised upward* as follows—

The *minimum* rate of flow required for the rinse in *Single Tank, One Position, Door Type* Dishwashers is 9 *gallons per minute* at a flow pressure of 20 pounds per square inch. This results in the delivery of 1½ *gallons* of rinse water over the rack or tray of dishes in the 10 *second* rinse period—sufficient in volume and in heat content to *raise* the dishes to the temperature necessary to effect the destruction of the harmful bacteria which survive the washing operation and to accomplish practically spontaneous drying of the dishes after emerging from the machine.

Where the resulting flow pressure —when the rinse is operating—exceeds twenty pounds, the pressure should be reduced to that level by means of a pressure reducing valve or plug cock in the hot water supply line to eliminate the unnecessary wastage of hot water. An uncontrolled rate of flow of 16 gallons per minute would not only result in increasing the cost of gas for water heating, in the average restaurant, by as much as $95.00 per year where eighty cent ($.80) Manufactured Gas is used, but would also, in all probability, result in the capacity of the water heating system being inadequate to supply the unanticipated demand for hot water or to maintain the required hot water temperature. It must also be remembered that, where the flow pressure of the rinse water *exceeds* 30 pounds per square inch, atomization of the rinse spray will usually occur. Under such conditions the rinse will be delivered in the form of a fine mist which will not only fail to flush off the residue of washing solution from the dishes but, due to rapid cooling, will be incapable of raising the temperature of the dishes to the level where destruction of the remaining harmful bacteria will be accomplished.

Based upon a 10 second rinse interval in which the 180 degree water is supplied at a rate of flow of 9 gallons per minute, it will be apparent that the single tank machine will require approximately 90 gallons of 180 degree rinse water per hour when washing 60 racks or trays of dishes per hour—75 gallons per hour when washing 50 racks or trays—and 60 gallons of 180 degree rinse water per hour when washing only 40 racks or trays. The total hourly requirement will be proportionately greater if the rinse periods exceed 10 seconds each.

The correct temperature of the washing solution is 140 to 160 degrees, F.

(b) *Single Tank, Curtain, Automatic Converter Type Dishwashers.* In this type of dishwasher the dishes in the dish racks are exposed to the re-circulated washing solution delivered from nozzles, arranged above and below the dish rack, while the dish racks are moving through the area above the wash tank. They are likewise exposed to the 170° to 180°, fresh, sanitizing rinse spray delivered from a single row of nozzles located near the discharge end of the machine and arranged that the spray is delivered from above and below the dish rack as it passes through the rinse spray area. The dish racks are moved through the machine at a speed of approximately 10 feet per minute.

Approximately 10 seconds will accordingly be required for the twenty inch dish rack to pass through the curtain of rinse spray from the single rows of nozzles, although each dish in the racks will not be exposed to the 170° to 180° rinse spray for the full, 10 seconds.

Due to the shorter rinse exposure, the recommended washing solution temperature for this type of dishwasher is 160°, F., in order to effect a greater percentage of bacteria kill during the washing operation and reduce the percentage of bacteria kill to be accomplished by the rinse operation during which the dishes are exposed to the 170° to 180° rinse water for a shorter period of time than in the single tank, door type of machine.

Where the flow of sanitizing rinse water is at the rate of 5 to 6 gallons per minute, from 5/6 to 1 gallon of sanitizing rinse water will be delivered over the dishes in each rack during the 10 seconds required for the rack to pass through the rinse sprays.

The number of gallons of 180° F., water required *per hour* for the sanitizing rinse operation in the Single Tank, Curtain, Automatic Conveyor type of dishwasher will accordingly depend upon the number of racks of dishes washed per hour. For example: approximately 125 to 150 gallons of 180° F., rinse water will be required *per person* when the machine is required to wash 150 racks of dishes per hour. The maximum of racks which will be washed in 1 hour must accordingly be considered when estimating the required capacity of the water heating system.

(c) *Single Tank, Curtain, Push-through Type Dishwasher.* This type of machine is similar in design and construction to the Single Tank, Curtain, Automatic Conveyor type of dishwasher *except* that it is not equipped with a conveyor to move the racks of dishes through the wash and rinse sprays at a regulated speed.

As a result, the racks are usually pushed through the machine at an excessive speed which results in the dishes being exposed to the wash solution for a period insufficient to accomplish complete removal of food residue or partial kill of the harmful bacteria which may be present. This is also true of the rinse operation where the resulting, shortened exposure to the 170° to 180° rinse spray prevents effective destruction of the bacteria which survive the washing operation and fails to heat the dishes sufficiently to accomplish practically spontaneous drying after emerging from the machine.

Since tests have established the fact that the manner in which this type of machine is operated frequently prevents acceptable sanitization of tableware, the National Sanitation Foundation has recommended that the single tank, curtain, push-through type of dishwashing machine *be discontinued.*

(d) *Two Tank, Automatic, Rack Conveyor Dishwasher.* In this type of dishwasher, the washing solution in the first tank is likewise recirculated by a pump and is distributed through nozzles above and below the dish rack while it is moving over the first tank. The second tank contains rinse water which is also recirculated by a pump and delivered through nozzles above and below the dish rack or tray when moving above the second or rinse tank. A temperature of 180 degrees is normally maintained in the primary rinse tank by means of externally applied gas heat or by an electric or steam immersion heating element.

Final, Sanitizing Rinse, using *fresh,* 180 degree water is delivered through a single row of rinse nozzles above the dish tray or rack. The rinse nozzles are located at or near the outlet end of the machine and the rinse water is delivered while the tray is passing beneath and over these nozzles.

The rate of movement of trays is such that the interval during which the final rinse water is being supplied is approximately 10 seconds. As in the single tank machine, the *final rinse* in the two tank machine is intermittent, but the total volume of 180 degree water required per hour is greater as the capacity of the Two Tank machine, expressed in dish racks or trays washed per hour, is greater than that of the Single Tank type. Based upon 10 second rinse periods in which the 180 degree water is supplied at a rate of flow of 4½ gallons per minute, the *hourly* requirement of 180 degree rinse water for the Two Tank machines will be approximately as follows: 75 gallons of 180 degree rinse water per hour when washing 100 racks or trays. 112 Gallons of 180 degree rinse water per hour when washing 150 racks or trays. 135 gallons of 180 degree rinse water per hour when washing 180 racks or trays. The total hourly requirement will be proportionately greater if the rinse periods exceed 10 seconds each.

(e) *Conveyor Type Machine* — This type is similar to the two tank machine in that it is provided with a wash tank, a primary rinse tank and final sanitizing spray rinse. The washing solution and primary rinse are recirculated by a pump as in the two tank machine and the final rinse is similarily located. In *operation,* however, the conveyor type machine differs from the two tank type in that dishes are moving through the machine continuously and the flow of rinse water is likewise continuous for so long as the conveyor is operating. Based on *continuous operation* of the conveyor type machine it will be apparent that the total, *hourly* requirement of 180 degree sterilizing rinse will be approximately as follows:

270 gallons per hour when supplied at a rate of flow of 4½ Gal. per minute.

240 gallons per hour when supplied at a rate of flow of 4 Gal. per minute.

210 gallons per hour when supplied at a rate of flow of 3½ Gal. per minute.

(f) In all automatic, conveyor type dishwashing machines—whether of the Single tank or Two Tank type —the flow of sanitizing rinse water is customarily controlled by a Trip Lever type of valve which is actuated by the dish racks when passing through the machine.

(4) To provide this increased rate of flow of 170° to 180° rinse water specified above, the *per person per meal* hot water demand factor must necessarily be *increased* from the 1.37 gallons specified under (5) in Part 1 of Chapter *V* and under (1) in Part 2 of Chapter *V* to 1.8 gallons *per person per meal.*

Consumption of hot water — *per person per meal*—in Food Service Establishments will not vary widely. An *average* per person, per meal, hot water gallonage factor may accordingly be employed on a basis for determining not only the volume of hot water which will be required —*per meal*—but also the *peak period* or *peak hour* hot water demand.

(a) The Average Hot Water Demand for *mass feeding* will be 1.8 *gallons per person per meal.* To determine the *total* number of gallons of hot water which will be required per meal, *multiply* 1.8 by the *maximum* number of persons that will be served. It may be slightly *higher* where a high priced meal is elaborately served or *less* for light lunches. The Meal Hot Water Demand will be distributed over 3 well defined periods or peaks of which one will be the *major* peak during which more than half of the total hot water required for the meal will be used.

Expressing, as it does, a *reliable average,* use of this factor involves only the determination of whether this average, per person gallonage factor should be *increased* or *diminished* based upon observation — on the job—of how elaborately the meals are served. Such observation of the actual conditions existing with respect to the service of the meals will make it possible to determine whether the Per Person, Per Meal gallonage factor should be increased to from two to two and one half gallons, for example, or reduced below 1.8 gallons.

As we are concerned, *primarily,* with providing adequate system capacity to supply the *Peak Period* and *Peak Hour Hot Water Demand,* this information may be readily obtained by using the figure representing the total gallonage required per meal as a *basis* for determining the peak period and peak hour demand as the *Meal Demand* will be distributed over 3 well defined periods or peaks of which one will be the *major* peak during which more than half of the total hot water required for the meal will be used as described under (5) in Part 1 of Chapter *V.*

If, then, we install sufficient water heating system capacity to meet this *major* peak demand, we need not be concerned over the ability of the system to meet any demand peak of a minor nature.

(b) During the *first,* or *pre-meal peak* approximately 28% of the hot water will be required for food preparation, Incidental pot and pan washing, etc. The *pre-meal peak* will cover an average period of from two (2) to two and one-half (2½) hours.

(c) During the *second,* or *meal peak,* approximately 55% of the hot water will be required for dishwashing, etc. The *meal peak* may exist for a single hour or longer depending on the duration of the dishwashing operation which, in turn, will usually coincide, in length, with the duration of the serving period.

Where the supply of tableware—silver, china and glass is adequate to serve *all* patrons during the long serving period and all dishes, etc., are washed at one time, the dishwashing period will be of shorter duration than would be the case if the tableware used by early patrons must be washed for re-use by later patrons.

(d) During the *third,* or *post meal* peak the remaining 17% will be required for general clean up of utensils and equipment and the Hot Water Demand will be distributed over a period of one or one-half hours.

(5) *The Peak Hour Demand Per Person* must accordingly be *increased* from the figures shown in Figure No. 6 in Part 2 of Chapter *V* to those specified below:

As 55% of the hot water required for the meal will be used during the *meal peak period* and an average of 1.8 gallons will be needed per person, per meal, the *meal peak demand* will average 1 gallon *per person served.* As the duration of the meal peak demand period is determined by the length of time required for dishwashing and the 1 *gallon* of hot water required *per person* served will be distributed over this period, the *peak hour demand* will accordingly be—*per person:*—

At the rate of 1 gallon per person per hour for a *single* hour if all dishes are washed in one hour.

At the rate of .67 gallon per person per hour for a period of 1½ *Hours* if the dishes are washed in that time.

At the rate of .5 Gallon per person per hour for 2 *consecutive* hours if the dishes are washed in that time.

At the rate of .35 Gallon per persons per hour for 3 *consecutive* hours if the dishes are washed in that time.

For example: Where 500 persons are served *per meal* and the dishwashing period or *meal peak* lasts for 1½ hours, the *peak hour* hot water demand will be 500 times .67 Gallons or 335 gallons and will continue at that rate for the succeeding ½ Hour.

The capacity of the Water Heating System *must* be adequate to supply this Meal Peak Demand.

(6) Use of a *single, average factor* for the hot water gallonage required *per person, per meal,* will eliminate the guess work involved in selecting one of a confusing array of factors, which may only partially reflect the conditions which determine what the hot water demand will be, and which, as a consequence, may result in failure to provide sufficient water heating system capacity. This is particularly true of the fallacy of basing the per person, per meal, hot water demand on the prices of the meal.

The price of the meal is *not* an accurate barometer of the number of dishes which will be used in the serving of the meal. It is, rather, the elaborateness with which it is served which determined the number of dishes which will be used and, consequently, the volume of hot water which will be required per person, per meal.

It is significant that the manufacturers of commercial dishwashing machines do *not* use the meal price factor as a basis for determining the number of dishes which a dishwasher will be called upon to wash for a given meal. Several of them have indicated that they feel it would be utterly ridiculous to do so.

Part 2, concluding this series will appear in the October issue.

IT'S NEW! IT'S DIFFERENT!

THE REPUBLIC *Self-Cleaning* **DUO-WAY**

Here is the convenient and practical disposal unit with the revolutionary 2 *ZONE* principle that everyone is talking about.

Because this amazing appliance has not just one, but *TWO* big zones (one designed specifically for drying and the other for burning) it not only completely eliminates wet garbage and other waste matter easily, economically and without offensive odor, but *automatically cleans itself as well.* A.G.A. APPROVED.

Additional Information Available Upon Request

AUTOGAS COMPANY 2151 W. Fullerton Ave., Chicago 47, Illinois

Caloric Appoints Wm. Y. Hill To Washington, D. C., Area

Caloric Stove Corporation has appointed William Y. Hill as district representative in the Washington, D. C. marketing area, comprising part of Virginia and Maryland in addition to the national capital. The announcement was made by Julius Klein, Caloric vice president and general sales director. Mr. Hill's headquarters are at 4307 So. 16th St., Arlington 1, Va. The new Caloric district representative is a veteran in the gas range field.

Gas-Oil Burner Provides New Protection For Homes That Are Heated With Gas

By
C. C. YOUNG
Research Engineer
The Gas Service Company, Kansas City, Mo.

THE recent announcement by Midwest Research Institute, of Kansas City, regarding the combination gas and oil burner developed by the Institute in cooperation with The Gas Service Company has created a widespread interest among manufacturers, utilities and others.

This interest is no doubt stimulated by the almost nation wide peak load problems in the gas industry. Difficulties experienced during the recent war in meeting peak day, and especially peak hour consumer requirements, remain acute in many areas. Today, three years after the close of the war, many utilities still find the requirements for gas fuel during peak load periods far greater than they are able to adequately serve. Consumer demands have increased more rapidly than facilities could be extended to serve such demands.

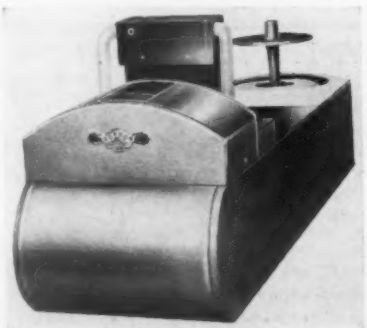
There are many ways of augmenting normal supplies of gas for domestic consumers during periods of peak demand. Among these methods are the underground storage of natural gas; the feeding of various mixtures of liquefied petroleum gases into the mains; the use of liquefied methane (natural gas); the intermittent use of manufactured gases, such as carbureted water gas; the newly developed methods of reforming hydrocarbons; the interruption of service to industrial consumers; and others.

An analysis of each of these methods, however, brings one to the inevitable conclusion that in general, peak load gases are expensive In some cases the peak load gases may cost as much as four or five times the regular cost of equivalent, or better, fuels available for the base load. Any new development which offers even a partial solution to the over-all serious problem of meeting peak load requirements is therefore of importance to the gas industry as a whole and to those customers depending upon this industry for heating fuel.

The use of standby fuels by the consumer during periods of peak demand on the gas system is in no way new. It has been employed by many organizations for industrial consumers for many years. During the war it was almost the universal practice to require the installation of standby fuel facilities by industries requesting increased gas supplies for industrial purposes. The idea of requiring standby fuel facilities on the part of home owners using gas for heating purposes is comparatively new, however, and the effectiveness of such practice has not as yet been proven on a large scale. It is anticipated, however, that the availability of equipment which makes such practice practical will in effect provide the gas industry with a new tool which, with all the other facilities already available for meeting peak load requirements, may be of value in reaching the ultimate solution.

No Longer a Luxury Fuel

As long as gas remained in the so-called luxury fuel class as a home heating fuel, that is, so long as the cost to the user amounted to at least ten per cent greater than the cost of other fuels, the law of supply and demand in general kept the peak loads within limits which could be met in the well balanced system. However, advances in the cost of solid and liquid fuels and other factors have largely removed natural gas from the class of luxury fuels. This comparative decrease in the cost of gas for home heating, along with the increased acceptance of the conveniences of automatic gas heat, has created a demand for gas which is greater than can be met with existing supply facilities.



Roberts-Gordon Oil and Gas Burner

Effect of Weather

At first thought one might assume that the answer to the gas supply problem thus created is the increase of gas pipe line sizes to accommodate the increased demand. A careful analysis of the load characteristics of home heating fuels, however, shows that the problem is not so easily solved as one might first assume. In most areas of America there is a very great variation in temperatures between seasons. For example, in the Great Plains area, where Kansas City is located, winter temperatures of 0° Fahrenheit and lower are common. In addition, severe cold waves are often, and in fact are usually accompanied by high winds, greatly increasing home heating fuels requirements.

The average home in Kansas City requires about 125 cubic feet per hour of natural gas (of about 1,000 BTU per cubic foot heat content) to meet heat requirements in cold weather. In order that the home may be warm in severely cold weather, it is necessary to provide heating equipment and fuel input which will be sufficient to heat the home during the coldest day of the year. In other words, the coldest day of the year determines the amount of capacity required throughout the year. If the average home requiring 125 cubic feet of natural gas per hour used this amount of gas continuously twenty-four hours per day throughout the year, the annual use of gas for heating purposes only would be over one million cubic feet per home! The actual average annual use of gas in this area, however, is less than 200,000 cubic feet for heating purposes per home.

This means that when home heating is set aside from other fuel markets and considered separately, the total annual gas sales for heating purposes through a given distribution system will be less than one-fifth

of the total annual delivery capacity of such a system.

Since the long gas pipe lines of America are operating, and have for many years been operating, at very nearly maximum capacity the year around, the significance of the above is evident. If gas is universally accepted as a home heating fuel, it will be necessary to increase by many times the amount of production and distribution facilities as has previously been the customary and accepted practice in the industry to serve a given annual sales volume.

"Dump" Gas in Off Peak Loads

In the past, the widely established practice on the part of pipe line and natural gas distributing companies of selling so-called "dump" gas during off peak periods worked very well. During the recent world war, however, when the use of gas for certain technological manufacturing processes was urgently needed it was found undesirable to interrupt delivery of natural gas for such purposes in order to favor the home heating user.

Industrial Gas—National Security

Is it not well at this time to consider what might happen in the event of another national emergency which would again make imperative the constant supply of gas fuels for production of vital materiel? The national security may be endangered if for extensive periods during the winter months the entire facilities of the gas industry are required for home heating purposes. During such periods there would be little gas left for making the articles of war.

During the recent war it was found necessary to curtail the use of gas for home heating purposes and in order to avoid breakdowns in gas service, many restrictions still remain on the use of gas for home heating. Equipment which would permit the serving of this insistent market and at the same time relieve to a large extent the serious peak load requirements of this market might prove to be of value to the national security.

Basic Research Took Two Years

During the past twenty-five years excellent automatic heating equipment has been developed around both gas and oil fuels. During this period, except for the war years, open competion has existed between the two fuels, and the equipment available reflects this competition. Gas equipment is designed to be strictly gas and oil equipment strictly oil. Certain equipment manufacturers have built furnaces suitable for either gas or oil, but in order to change from one to the other, complete and extensive changes in combustion equipment have been required.

Before it would be possible to directly utilize oil in relieving peak loads created by home heating it was, therefore, necessary to conduct a great deal of basic research on ways and means of combining the two fuels in the same unit.

About two years ago the Midwest Research Institute, in cooperation with The Gas Service Company of Kansas City, began working on the development of equipment suitable for home use which would burn gas in mild weather and switch automatically to oil in very cold weather.

Oil was selected as the standby fuel because it seemed to present the most advantages of all fuels for this purpose. It has a high heat content per unit of storage; it can be safely stored without pressure in inexpensive tanks; and while currently in short supply, it is basically the most available of all fluid fuels.

Amount of Standby Oil Required

Starting with the assumption that gas will be available during moderate winter weather and that it is desirable to switch over to the standby fuel only during severely cold periods, it was found that an Underwriters' Approved storage tank of only 275 gallons capacity located in the basement of the home will provide from ten to forty days' heating fuel supply, depending upon the size of the house and the temperature at which it is desired to switch over from gas to oil. This supply is sufficient to last all winter for standy purposes. In the Kansas City area, the percentage of standby oil required, when compared to total heating fuel requirements for the year, is approximately as follows:

Outdoor Temperature Switchover Point*	Percentage of Oil Used to Total Fuel Requirements—Annual Basis
10° F.	7 per cent
15° F.	10 per cent
20° F.	15 per cent
25° F.	22 per cent

** An outdoor thermostat automatically switches to oil when the weather gets very cold.*

By burning 10 per cent to 25 per cent oil during the heating season, distribution systems will be relieved of serious peak load problems and the home heating consumer will be assured of adequate heating service at all times. The actual switchover point from gas to oil fuel may be varied to suit individual distribution requirements. In northern areas more oil may be required and in southern areas less oil. In general, however, indications are that a summer filled tank of 275 gallons capacity of fuel oil in each home using gas for home heating purposes would almost completely solve the problem of gas shortage during cold waves.

Automatic Changeover

In accordance with the above reasoning, the Midwest Research Institute and the Research Laboratory of The Gas Service Company, in Kansas City, set about in the fall of 1945 to develop equipment which would automatically heat homes with natural gas during mild weather and with oil in severely cold weather.

In order to give effective relief to the distribution system during the weather conditions which will bring about maximum peak loads it is evident that the switchover of heating plants from gas to oil must be entirely automatic and out of the hands of the consumer.

Field Tests Through 1947

Equipment was perfected to the extent that twenty-five units were installed in Greater Kansas City during the winter of 1947-1948 for tests, and with minor adjustments this equipment performed very satisfactorily.

Development and Improvement of Equipment—A Fluid Burner

Based on the field tests obtained with these original installations, the equipment design has been further perfected, and additional units are being manufactured. Equipment being developed consists of conversion burners which will convert existing furnaces and boilers into automatic gas-oil heating units and also gas-oil furnaces and boilers for new homes and old homes requiring complete new heating systems.

The efficiency of the new gas-oil units has been carefully tested and has been found to be equal to that of existing gas or oil units manufactured separately. Gas is burned in a conventional manner but a new and different oil burner has been developed, built into and around the gas system so that many parts are interchangeable; that is, a part performing one service on the gas cycle will also perform a service on the oil cycle thereby eliminating a great many parts which would be required if separate gas burners and oil burners were installed in the same furnace.

The equipment developed in Kansas City is not a gas burner and an oil burner, but consists of a single unit designed to burn fluid fuels. Operation is entirely automatic. The customer merely fills his oil tank dur-

ing the summer months with 275 gallons of No. 2 fuel oil. The burner is lighed in the fall and all that remains for the customer to do is to adjust his room thermostat to the temperature he desires. All other operations are automatic. An outside thermostat switches over from gas fuel to oil fuel when the weather gets severely cold and automatically switches back again to gas as soon as the weather has moderated. The user is protected against any possible low pressure period resulting from a short gas supply, and the gas supply system is relieved of a serious peak load problem during cold waves—and ideal fuel combination for both consumer and gas supplier.

Oil Availability for Standby

Preliminary discussions with oil companies and distributors indicate a favorable reception of the idea by oil people. Oil distributors are also confronted with severe storage and peak delivery problems during cold weather and the filling of tanks of the combination users during the summer months contributes to the best use of delivery facilities.

From an overall economic viewpoint, the combination of gas and oil in this manner is such as to conserve the national resources to the best advantage. It will assist gas transportation and distribution companies in meeting an insistent market, which they cannot now adequately serve. At the same time, it will conserve oil supplies by limiting oil used for home heating purposes (in those homes that have combination equipment) to severely cold weather. The balance between gas and oil fuel may be set at any desired point merely by changing the cut over setting of the outside thermostat.

Customer's Heating Insurance

When natural gas is piped for long distances cross country there is an ever present possibility of interruptions in the supply due to washouts, line breaks, compression station failure or other causes. While the performance of American pipe line systems has been excellent, breaks do occur and interruptions in deliveries are always a possibility.

It is, therefore, good insurance for any customer depending principally on natural gas for heating purposes to provide an additional fuel which can be stored on his premises in readiness for emergencies. The widespread use of a fluid burner capable of burning both gases and liquids would provide this insurance.

A Valuable Tool

The great pentup demand for automatic gas heating service presents both an opportunity and a very serious problem to the gas industry throughout a large part of America. To adequately serve this market it will be necessary to provide facilities for heretofore unprecedented demands during peak loads. The basic problem involved in serving such increased markets involves not only the augumenting of facilities to serve greater base loads but also additional facilities to serve more serious peaks occasioned by cold weather conditions. No doubt increased production and transportation facilities will eventually catch up with increased base demands. As to the solution of the peaks of comparatively short duration occasioned by weather changes, it appears that a combination gas-oil burner offering continuous automatic heating service to the customer, who maintains his own standby fuel, may be useful.

The combination equipment developed in Kansas City may prove to be a valuable tool for use by the industry in providing automatic fluid heat for the homes of America.—*"Gas Service," Kansas City, Mo.*

IRON SPONGE *over 72 years*

First for Gas Purification

Extra high capacity and activity on first and repeated foulings . . . longer periods between necessary recoverings . . . fast "come back" after fouling . . . low initial cost . . . low maintenance . . . minimum operator attention. These are the advantages of Iron Sponge and the reasons why Iron Sponge has been the gas industry's choice as a purification material for over seventy-two years. With today's increased demands on gas producing facilities, such advantages as these are doubly important. Other Connelly products for the gas industry include:

CALOROPTIC. A simple, inexpensive instrument for continuous direct readings and control of BTU's applied to manufactured, natural, propane and butane air gas.

H_2S TESTER. For quick, accurate tests using pre-treated paper discs.

pH TEST KIT. A complete outfit for accurate pH determinations. Includes universal indicator solution, test tubes, color chart and full directions. A handy 3″ x 5″ pocket case holds the entire outfit.

Connelly engineers are prepared now, as always, to assist you with any problem in gas purification. Our files and laboratory facilities are at your service without obligation.

CONNELLY, Inc.

3154 S. California Ave., Chicago 8, Illinois
Elizabeth, N. J. • Los Angeles, Calif.

Desulfurization of Coal During Carbonization

AT THE MEETING of the American Chemical Society, held at St. Louis Mo., Sept. 6 to 10, R. E. Brewer and J. K. Ghosh, U. S. Bureau of Mones, Central Experiment Station, Pittsburgh, Pa. presented a paper on the subject of "Desulfurization of Coal During Carbonization with Added Gases and Quantitative Determination of Individual Sulfur Compounds in the Carbonization Products." The paper was presented to the Division of Gas and Fuel Chemistry, and the following is an abstract of the paper.

The two main objectives of this study were to increase the conversion of coal sulfur to volatile sulfur compounds and to determine the quantitative distribution of the sulfur in the coke and tar, and as hydogen sulfide, mercaptans, thiophenes, marbon disulfide, carbon oxysulfide, and residual sulfur in the gas.

The extent of the desulfurizing action, or percentage conversion of coal sulfur to volatile sulfur compounds, was determined from results of thirty tests made under comparative conditions to study certain factors. In the first series of tests, 15-gram samples of 20-35 Tyler mesh Pittsburgh-bed preheated coal and Illinois No. 6-bed raw coal were carbonized at 700°, 800°, and 875° C., and Pittsburgh raw coal at 800° C. without added gas. In the second series, ammonia gas was passed at a constant rate of 1.907 liters (N.T.P.) per hour through the coal samples during their carbonization at the same temperatures. In the third series, the lump cokes from the second series were cooled to room temperature and reheated at the same carbonization temperature with ammonia again passed through the cokes at the same constant rate. To study the effect of coke size, the lump coke from a second carbonization test of the Pittsburgh preheated coal in ammonia at 800° C. was cooled to room temperature, crushed to pass a 20-Tyler mesh sieve, and reheated in ammonia at 880° C. Two tests were made to determine the effect of starting the ammonia gas through the heated coal and coke samples at 500° and continued until the end of the tests at 800° C. The second and third series of tests were repeated at 800° C. on the Illinois No. 6 coal and its lump coke with added hydrogen and added nitrogen. Because the volume of gases is almost doubled, when ammonia is decomposed at 800° C., the hydrogen and nitrogen were each passed at a constant rate of 3.766 liters (N.T.P.) per hour or at about twice the rate used for ammonia. Two tests were made to determine the effect of starting hydogen gas through the coal and coke samples at room temperature and continued until the end of the tests at 800° C.

Good sulfur balances were obtained in most tests from the sum of the total sulfur in the coke, tar, and volatile sulfur products in the gas. The percentage conversions of coal sulfur to volatile sulfur products increase somewhat (a) with higher carbonization temperatures, and markedly (b) during carbonization of coals in ammonia, (c) during reheating of the lump and fine cokes, and (d) during heating of the coal and coke samples with ammonia passage started at 500° C. Tests with added hydrogen or nitrogen gave lower conversions than were obtained in similar tests with ammonia gas.

Percentage conversions for preheated Pittsburgh coal at 800° C. were: coal without added gas, 48.1; coal with ammonia, 55.0; lump coke with ammonia, 60.0; and through 20-Tyler mesh coke with ammonia, 62.3. Percentage conversions for Illinois No. 6 coal at 800° C., except where otherwise stated, were: coal without added gas, 46.7; coal with ammonia, 53.2; coal with ammonia started at 500° C., 55.9; lump coke with ammonia, 67.2; lump coke with ammonia started at 500° C., 67.8; coal with hydrogen, 38.0; lump coke with hydogen, 48.8; coal with hydrogen started at room temperature, 55.8; lump coke with hydrogen started at room temperature, 59.2; coal with nitrogen, 37.0; and lump coke with nitrogen, 41.3.

The marked desulfurizing action of ammonia gas can be attributed to its almost complete decomposition at 800° C. into nascent hydrogen and nascent nitrogen. Nascent hydrogen is very reactive and combines with sulfur compounds in the coal and coke to form additional hydrogen sulfide and thus increases the overall conversion of coal sulfur to volatile sulfur compounds. The desulfurizing actions of molecular hydrogen and of molecular nitrogen, on the other hand, are much lower.

OLYMPIC ATHLETES SERVED WITH AIRBORNE BREAD FROM CALIFORNIA

Natural gas sold by Southern Counties Gas Company in Culver City, California, played a part indirectly in the Olympic Games in London.

This interesting fact came to light recently when it was revealed that Helms Bakeries, one of the largest users of the Company's clean, efficient fuel, baked all the bread used by American athletes competing in the Olympic games. The bread, baked at Helm's Culver City plant, was flown to England daily by American Airline planes.

Sliced and packed in cardboard cartons, the freshly baked loaves were rushed to the Los Angeles Municipal Airport where they were placed aboard a plane leaving daily at midnight. At La Guardia Field, the cargo was transferred to a trans-atlantic plane which arrived in London in time for the midday meal.

This is the third time Helms Bakeries have supplied bread for Olympic Games. During the 1932 games in Los Angeles, the Helms company baked for athletes of all nationalities.

Along the Pipe Lines

P. G. & E. Applies for Pipe Line To Arizona Boundary

Pacific Gas and Electric Company, San Francisco, California, has applied to the Federal Power Commission for authorization to construct a natural gas pipeline system extending from an existing pipeline terminal near Milpitas, Santa Clara County, California, to a point on the California-Arizona boundary line near Topock, Mohave County, Arizona. At that point the line would connect with the system of pipelines proposed for construction by El Paso Natural Gas Company to transport to the California border natural gas from producing fields in the San Juan Basin in New Mexico, Colorado and Utah and from the Parmian Basin in New Mexico and Texas.

At the Milpitas Terminal the pipeline proposed by Pacific Gas and Electric would connect with existing pipelines extending to San Francisco, Oakland, Berkeley and other cities in the East Bay area. The proposed line of approximately 510 miles in length would be used to transport natural gas to the San Francisco Bay area and to supplement existing sources of gas available to the company.

The application stated that the initial capacity of the Milpitas-Topock line would be 150,000,000 cubic feet of gas daily during the first year following completion. With the addition of compressor capacity, the pipeline would have an ultimate delivery capacity of at least 400,000,000 cubic feet per day, the company added.

Tennessee Gas Transmission Corp.

Tennessee Gas Transmission Corp. reports that natural gas delivered through its pipe line system for the second quarter average 375 million cubic feet daily, an increase of 7% over the 351 million cubic feet daily transported in the first quarter of this year.

In a letter to stockholders President Gardiner Symonds stated that the company was fortunate in obtaining a large amount of unexpected pipe for its expansion program. "The volume of gas sales through the expanded system is expected to reach 600 million cubic feet per day in 1948 and to further increase in 1949 as construction is completed."

He told stockholders that the company expects the Federal Power Commission to give early approval to Tennessee's application to lay a third line including an extension to Buffalo, New York, which will give the company a capacity of one billion cubic feet daily. He said that Tennessee now has confirmed orders with steel mills for substantially enough pipe to install the third parallel line and extend service to Buffalo.

He also revealed that Texas natural gas soon will be going to the huge atomic energy plant at Oak Ridge, Tennessee, if the Federal Power Commission approves. The Atomic Energy Commission has requested 60 million cubic feet daily from the Tennessee system for its Oak Ridge operations.

Natural Gas Service for Arizona Communities

The people of a number of Arizona communities will themselves decide which of several utilities competing for the rights will distribute gas in central Arizona.

The decision is to be made at special elections at which the citizens of Williams, Flagstaff and Winslow will determine the distributing agency. Rivalries developed over efforts of the Southern Union Gas Co. to distribute natural gas in Arizonta towns, of which Flagstaff, Kingman, Prescott, Winslow and Williams are the cities most directly affected by the controversy.

Southern Union Gas Co. is a subsidiary of the San Juan Pipeline Co., which has announced plans to construct a pipeline across northern Arizona to transport New Mexico gas into California.

Franchises have been granted by the city councils of Williams, Flagstaff and Winslow to Southern Union Gas Co., subject to special elections. A similar application has been filed with the Prescott city council. A franchise for service in all of Mojave County, which includes Kingman, has been granted to Southern Union Gas Co., and a similar franchise has been obtained by the company to operate in all of Yavapai County, except in the incorporated city of Prescott.

Arizona Power Co. is the principal opponent to Southern Union Gas Co. in the matter. The power company holds a manufactured gas franchise for Prescott and Yavapai County, and has applied for manufactured gas franchises at Prescott and Flagstaff.

The Arizona Natural Gas & Power Co., a newly organized concern headquartered in Flagstaff, has joined with the Arizona Power Co. in opposing the franchises granted to Southern Union Gas Co.

Republic Steel Ships 24-inch Pipe to Southern Natural Gas

The first shipment of pipe from Republic Steel Corp.'s new large diameter pipe mill has left Republic's Gadsden plant consigned to the Southern Natural Gas Co., Birmingham. The shipment is the first of a total of 140 miles of 24-in. pipe line pipe which Republic will make on the new mill for the gas company.

The pipe mill is able to produce electrically welded steel pipe in diameters from 20 to 30 in. and in length of 30 ft. In some instances, two sections will be welded together before leaving the plant so that shipment of single sections 60 ft. in length will be possible.

Increase in Gas Delivery for Southern California Companies

Southern California Gas Co. and Southern Counties Gas Co., have taken further steps to assure greater delivery of Texas gas by applying to the Federal Power Commission in Washington for permission to increase the carrying capacity of the present Texas-Los Angeles line (opened in November, 1947) from 305 million feet per day to 405 million feet per day.

The company reported to the FPC that the project contemplates the installation of more than 100 miles of 30 inch pipeline, plus some added compressor facilities at Blythe, Calif. Cost is estimated at about $10,000,000. It is proposed to lay approximately 88 miles of 30 inch line to "loop" the existing California section of the Texas-Los Angeles line from Whitewater, Calif., just north of Palm Springs, to a point near Montebello in Los Angeles County. Also included in the proposal is the laying of 15 miles of 30 inch from a point near Rivera, Calif., near Santa Fe Springs, to the vicinity of Slauson and Western Avenue, in the southwestern section of the city of Los Angeles.

The Blythe Compressor Station will be augmented by 4,000 h.p. additional compressor capacity, under plans submitted to the FPC.

Southern California Gas Company on July 20 began construction on a new 30-inch pipeline from the Santa Fe Springs terminus of the Texas line, to the Pasadena-Alhambra area. The job calls for the laying of 12 miles of 30 inch diameter high pressure, steel-wall pipe. Costing an estimated $1,500,000, this feeder line will supply Texas gas to approximately 100,000 users in the Pasadena-Alhambra-South Pasadena area of Los Angeles County as a reinforcement to the distribution already afforded those districts by Southern California Gas Co.

Lone Star Gas Co. Appoints Tolbert Supt. Pipe Lines

Luther Tolbert was named superintendent of pipe lines for the Lone Star Gas Company, July 1, succeeding R. Vandercook who has resigned. The announcement was made by Julian L. Foster, general superintendent of the company's Transmission Division.

Mr. Tolbert had been assistant superintendent since 1927. His post as assistant superintendent has been assumed by R. N. Carpenter, who was promoted to that position from Ranger where he was district foreman. Mr. Carpenter will move to Dallas to take over his new duties.

The new superintendent has been with Lone Star since 1920 when he started as a truck driver while Lone Star was building line K in Hood County.

During the first six months of 1948 salvage work in the Transmission Division's pipe line department included nine major recoveries of pipe totalling more than 154,512 feet of varying sized pipe or approximately 30 miles of line.

The work of salvaging and relaying was supervised by Earl Miller, construction foreman for the Pipe Line Department.

New Texas-Chicago Pipe Line Approaching Completion

Distribution of an additional 147,000,000 cubic feet of natural gas daily in the Chicago and northern Illinois area came a step closer with the recent shipment by Midwest Piping & Supply Company, St. Louis, of a final consignment of fabricated piping for the new Texas-Chicago pipe line of the Natural Gas Pipeline Company of America.

As pipe-line laying crews and suppliers meet schedules, the new line is expected to be in full operation by midwinter. The line, which parallels and supplements one built in 1931, will increase daily supply of natural gas in Chicago from 229,000,000 cubic feet to about 376,000,000 cubic feet. It is partially operating already in an auxiliary capacity to the old line throughout most of its 900-mile length.

Midwest's final shipment was for the pumping station near Hooker, Okla. The pipe fabricating company began almost a year ago the job of forming and assembling 400 tons of fabricated piping for use in expanding the capacity of pumping station in the line. Piping used ranged from three to 26 inches in diameter, and from two to 40 feet in length.

The stations, in addition to the one near Hooker, are near Stinnett and Perryton, Tex.; Bloom, Heizer and Glasco, Kan.; Beatrice, Nebr.; Hastings, Truro and Harper, Ia., and Geneseo, Ill.

The pumping stations are equipped with gas driven compressors. The fabricated piping, made of carbon steel pipe grade B, will withstand pressure of 1080 pounds p.s.i. Normal pressure, however is 712 lbs.

Natural Gas Storage For Winter Peak Demands

Cities Service Gas Co. announces that injection of natural gas into the Craig storage field in northeast Kansas, near Kansas City, has been started. Small volumes of gas are being injected whenever there is sufficient excess volume at Ottawa above market needs and the requirements for the Welda storage reservoirs. Average daily input to storage continues at the rate of about 70,000 MCF with an estimated balance underground on June 30 of 28,888,000 MCF.

New York State Natural Gas Corp.

An FPC Presiding Examiner has rendered a decision, subject to Commission review, providing for issuance of a certificate of public convenience and necessity authorizing New York State Natural Gas Corporation to acquire from Empire Gas and Fuel Company of Pennsylvania and to operate approximately ten miles of pipe line and to construct and operate three new measuring and regulating stations for the purpose of supplying additional quantities of natural gas to Empire Gas & Fuel Company of Pennsylvania and to Empire Gas and Fuel Company, Ltd. of New York.

The Examiner's decision has been served upon the company and parties to the proceedings who are allowed 20 days within which to file exceptions. If no exceptions are filed and a review is not initiated by the Commission within ten days following expiration of the 20-day period, the decision becomes the final decision and the order of the Commission as provided by rule.

Southern California Gas Co.

Southern California Gas Company has been authorized by the Federal Power Commission to construct and operate a 73-mile natural gas pipeline connecting with the existing Texas-to-California pipeline near Desert Center, California, and extending into the Imperial Valley to the town of Calexico, California.

The purpose of the authorized line is to supply natural gas to Niland, Calipatria, Brawley, Imperial, Holtville, El Centro, Heber and Calexico. Brawley, El Centro and Calexico are now supplied with butane air gas service; the other communities have no gas service at present. (*See American Gas Journal, March* 1948, *pg.* 50.)

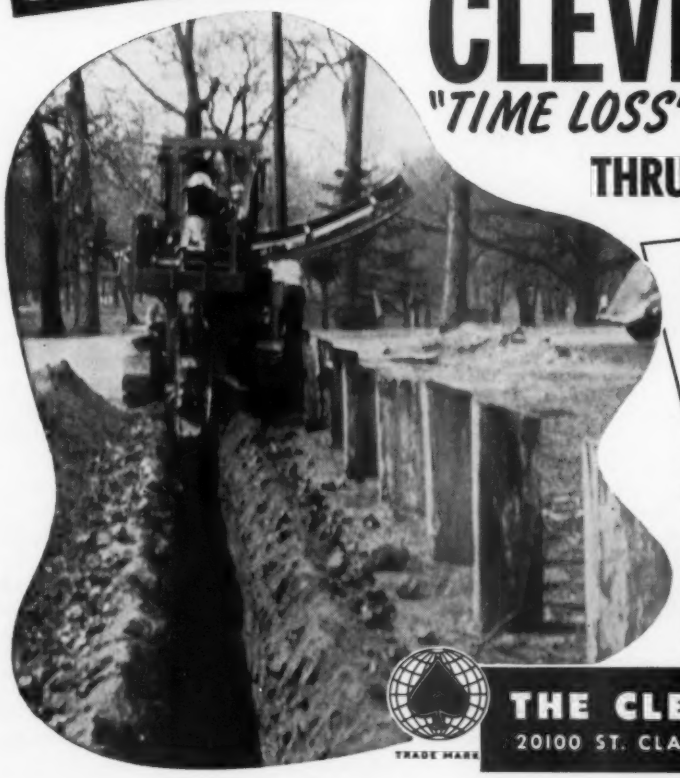
Texas Gas Transmission Corp.

The Federal Power Commission has authorized Texas Gas Transmission Corporation, Owensboro, Kentucky, and Memphis, Tennessee, to construct additional facilities to expand the system capacity of its Memphis Division from 185,000,000 cu. ft. to approximately 200,000,000 cu. ft. daily.

ON YOUR GAS TRENCHING JOBS

CLEVELANDS CUT THE "TIME LOSS" AVERAGE TO THE MINIMUM THRU THEIR EXTREME

MANEUVERABILITY, MOBILITY AND VERSATILITY



If you would cut the "TIME LOSS" on your trenching work to the minimum and assure profits your trencher must have VERSATILITY to the "Nth" degree.

CLEVELANDS have the speed, stamina, power, compactness, absence of dead weight, ease of handling, and ease and speed of transportation on truck or trailer to assure you MOST TRENCH—IN MOST PLACES—IN SHORTEST TIME—AT LEAST COST. They're the most logical machine for your gas trenching jobs.

THE CLEVELAND TRENCHER CO.
20100 ST. CLAIR AVENUE • CLEVELAND 17, OHIO

New Equipment and Appliances

Pipe Line Kettle

A new 20 barrel heating kettle for pipe line coating is made by Littleford Brothers, 443 East Pearl St., Cincinnati, Ohio, which embodies many improvements over other units available.

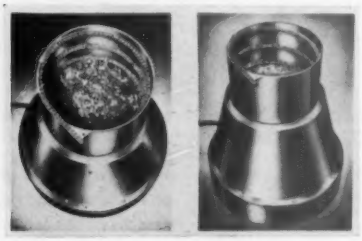
Littleford Heating Kettle

Some features include: Single oil burner of atomizing type and large capacity which lights instantly; double heat circulating system for even heat distribution; hydraulic system for agitation which keeps mineral filler in suspension and operates automatically, requiring operator's attention only for stopping or starting; complete insulation; has splash plates to prevent spilling when in transit and has trac-type wheels, or skids for truck mounting.

Full details from the manufacturer or from M. J. Crose Mfg. Co., Tulsa, Okla., their exclusive representative.

Vibratory Vertical Bowl Feeders

A unique method of applying electro-magnetic vibration to a bowl container produces a circular traveling and climbing motion of small pieces, parts, or bulk powders, etc.



Syntron Bowl Feeder

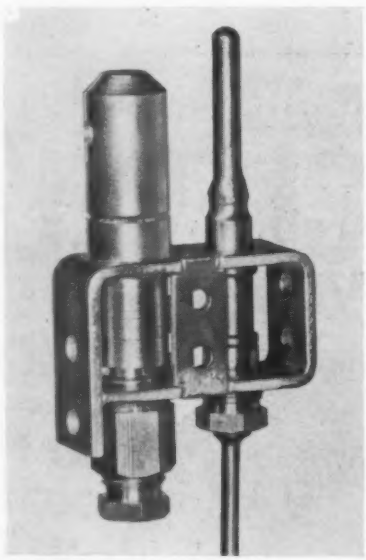
By having a grooved track ramp up the inside of the wall of the bowl these small pieces can be fed one at a time, in single file, in a predetermined manner to a machine, to packages, for inspection, for counting, for assembling to other parts and to similar purposes. The illustrations show how small parts can be fed, one at a time, fast or slow. Speed of feed and starting and stopping of flow can be readily controlled.

The size of the piece to be handled, particularly the length, determines the arc of the grooved track, consequently, the size of the bowl. Will feed down to extremely small quantities and stream size, furnishing its own agitated and vibrated bowl supply hopper. Operated from 110, 220 or 440 volt, A. C. current.

Detailed information is available from Syntron Company, 920 Lexington Avenue, Homer City, Pa.

New Gas Pilot Burner

Annulair is the name selected by the Milwaukee Gas Specialty Company for a complete new line of gas pilot burners.



Annulair Gas Pilot

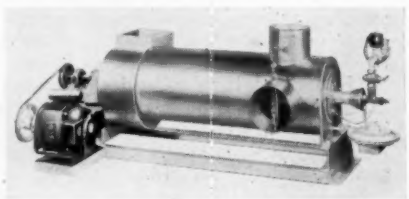
This unit will be offered to the gas industry in three types; Type B for horizontal low consumption gas application, Type C vertical low consumption, and Type D for larger appliances and burners.

The manufacturer claims several advantages to these new pilots, such as stable pilot flame under wide range of gas pressures, no flash-back providing correct orifice is used, no burning at the orifice, flame unaffected by restriction of primary air opening or by high ambient temperatures, dual orifice replaceable for any type fuel gas, and elimination of air shutters.

Manufactured for use with manufactured, natural and LP gas. On display at G.A.M.A. exhibits, October 1948,

Utility Air Heater

The Midget Utility Air Heater with improved design features is available as a complete package unit, Gas Appliance Service, Inc., 1211 Webster Ave., Chicago, has announced. It includes fan, motor, drive, safety devices and temperature control.



Midget Air Heater

The applications include baking lacquers and enamels on metal ware, baking varnish on coils and armatures, curing rubber products, and the drying of paint, paper and in food processing.

Has heating capacity of 125,000 BTU per hour. The heater is suitable for temperatures up to 350° Fahrenheit. The bricklined combustion chamber affords complete combustion of gas. The fan capacity is 1000 cubic feet of air per minute. Overall dimensions, 48 x 24 inches.

Lennox Floor Furnace

New gas fired floor furnaces made by Lennox Furnace Co., Marshalltown, Iowa, and approved by A.G.A. for natural, manufactured, mixed or L. P. gases have the entire unit serviced from above.

In all sizes, units are only 23 inches deep, eliminating need for pit. The 30,000 Btu unit is only 14 inches wide and may be set between joists. Other sizes range up to 60,000 Btu per hour. Fully vented and with high primary air entrainment of burner to insure quiet ignition, operation and extinction. Descriptive bulletin available from the company at Marshalltown, Ia. or Fort Worth, Texas.

News of the Gas Industry

Gas Industry Promotes Dealer Campaign On Domestic Gas Ranges

A new merchandising campaign to promote the sale of all domestic gas ranges has been sponsored by the Domestic Gas Range Committee of the Residential Gas Section of the American Gas Association. This activity is designed to enlist enthusiastic dealer cooperation in stimulating gas range sales, not only in new construction markets, but also in increasing replacements of the 10,623,000 gas ranges now in use that are more than 10 years old. The campaign is timed for gas utility company use this fall, but it has been so designed that it can effectively be operated at any time within the coming year.

As an initial step in the program a contest was staged within gas utility companies for a suitable campaign slogan. Jane M. Schroeder, Home Service Director, Minneapolis Gas Light Company, was awarded first prize for the slogan "Smart Cooks Know—Gas Has Got It." Joseph B. Daigre, Advertising Assistant, Gulf States Utilities Company, Baton Rouge, La., won second prize with the slogan "For That Cook Book Look—Gas Has Got It."

The Promotion Bureau of A.G.A. has prepared two comprehensive portfolios, replete with sales and promotional material for conducting a gas range sales campaign. One of the portfolios is designed for gas utility executives. It provides ideas and visual aids for putting the campaign to work and obtaining the greatest cooperation from gas range dealers.

The dealer portfolio outlines markets, highlights selling features of gas ranges and provides samples and descriptions of advertising, merchandising and display material available to dealers through A.G.A., the Gas Appliance Manufacturers Association and the individual gas range manufacturers.

Portfolios were mailed to gas utility companies last month and many companies already have indicated their intention to participate in this intensive campaign to increase dealer sales of domestic gas ranges.

Columbian Gas System Inc. Makes Changes in Personnel of Pittsburgh Group

Several changes within the supervisory personnel of the associated natural gas companies comprising the Pittsburgh Group of The Columbia Gas System, Inc., were announced recently by Irving K. Peck, vice president and general manager.

James E. Coleman, assistant sales manager since June, 1945, has been named assistant purchasing agent of the Pittsburgh Group. He will assist John M. Simpson, purchasing agent in the general offices of the Pittsburgh Group.

O. O. Todd, local manager for The Manufacturers Light and Heat Co. in Beaver Falls, New Brighton and Rochester, Pa. has replaced Mr. Coleman as assistant sales manager in charge of the industrial sales division for the Pittsburgh Group.

Ira D. Findley, industrial engineer for this gas company at offices in the Bellevue section of Pittsburgh, has been appointed local manager replacing Mr. Todd and now has headquarters at Beaver Falls.

J. N. Kennedy, industrial engineer in the East Liverpool, O., area has been transferred to replace Mr. Findley.

Mr. Peck also announced the appointment of F. S. Thomas as assistant sales manager in charge of the appliance sales division of the Pittsburgh Group.

Replacing Mr. Thomas is John W. McBurney, local sales supervisor for the South Hills area of Pittsburgh. Mr. McBurney has been with the gas company since 1940.

Third Annual Short Course on "Instrumentation for the Process Industries"

The Agricultural and Mechanical College of Texas, at College Station, Texas, will offer their third short course on "Instrumentation for the Process Industries," on October 26, 27 and 28, 1948. The course will be conducted as a seminar with lectures and discussions on the subject of automatic control. Cooperating with Texas A & M in the presentation of this course will be many industrial concerns manufacturing oil, gas, and chemical products. Manufacturers of instruments and automatic controls, likewise, are taking part by arranging to show educational exhibits, and provide capable lecturers for many of the sessions.

The program will cover a wide variety of subjects making it of value to anyone who uses such instruments, especially to instrument, process design and operating engineers. The lectures will cover the subjects of measurement and control of temperature, pressure and liquid level, time control, and other allied subjects. The relationship between practice and basic control theory will be stressed.

Anyone living either in or outside Texas is eligible to take this course on payment of the $5.00 registration fee; pre-registration by mail is encouraged. Rooming accommodations and meals will be available on the campus at the college dormitories and mess hall at a reasonable price. An evening banquet and entertainment are also planned.

Further information may be obtained by writing Professor P. G. Murdoch, Chemical Engineering Department, Texas A & M College, College Station, Texas.

CONVENTION CALENDAR

September

10 *New Jersey Gas Association* 33rd Annual Meeting, Hotel Monmouth, Spring Lake, N. J.

13–14 *Midwest Gas Association.* Gas School and Conference, Iowa State College, Ames, Iowa, Hotel Sheldon-Munn.

14–16 *Pacific Coast Gas Assn.,* Annual Convention, Sant Cruz, Calif. Hotel Casa del Rey.

17 *Oklahoma Utilities Association,* Gas Division, Biltmore Hotel, Oklahoma City.

20–22 *National Butane-Propane Assn.* Annual Convention and Trade Exhibit, Congress Hotel, Chicago.

October

4–8 *American Gas Assn.* Annual Convention and GAMA Exhibit, Atlantic City, N. J.

14–15 *Texas Mid-Continent Oil and Gas Assn.,* Annual Meeting, Fort Worth.

21 *New England Gas Assn. Operating* Division. Hotel Sheraton, Worcester, Mass.

25–29 *National Metal Exposition and Congress,* Philadelphia, Pa.

26 *Independent Natural Gas Assn.,* Tulsa, Okla., Mayo Hotel.

November

1–3 *Wisconsin Utilities Association,* Pfister Hotel, Milwaukee.

8–11 *American Petroleum Institute,* Stevens Hotel, Chicago.

8–12 *National Hotel Exposition,* Grand Central Palace, New York.

11-12 *Mid-Southeastern Gas Assn.,* Annual Meeting, Sir Walter Hotel, Raleigh, N. C.

18–19 *National Personnel Conference* of the Gas Industry, Palmer House, Chicago.

29th Annual Meeting

The Texas Mid-Continent Oil & Gas Association's 29th annual meeting will be held at Fort Worth October 14 and 15, 1948, Charles E. Simons, vice-president and general manager has announced.

Fort Worth was selected for the next meeting of Texas oil and gas operators during the San Antonio convention this year but the exact date has now been fixed. The last Fort Worth meeting for the full membership was held in 1943.

Gas Exhibit at Wisconsin Centennial Exposition

There was a huge attendance of the general public at the Wisconsin Centennial Exposition at State Fair Park, Milwaukee August 7th to 29th which depicted the history and development of Wisconsin.

The development of the manufactured gas industry from the first Wisconsin gas plant in Milwaukee in 1852 to its present stage of preparation for the introduction of natural gas from the Hugoton field in Texas was featured. Maps spotted the introduction of manufactured gas by decades in 118 communities.

Charts showed the continued growth and usefulness of the gas industry and how 26 plants serve more than 1,500,000 persons and thousands of factories with gas that is sent through 4700 miles of pipe to supply heat and refrigeration for uses in scores of homes and factories.

Some of the old wooden pipes that served to carry gas to points of use were on display as were old ranges, refrigerators and water heaters. Equipment of "the old days" was contrasted with present efficient appliances.

A look into the future for the greater usefulness of low-cost gas service was provided by a display of the construction of the 1069 miles of natural gas pipeline. A map indicated the cities that will receive natural gas from the Hugoton field.

National Personnel Conference

The Third Annual Personnel Conference of the American Gas Association will be held in Chicago on November 18th and 19th. Co-sponsors of the Conference are the A.G.A. Personnel Committee and the Midwest, Southwest and Great Lakes Personnel Conference Groups of the A.G.A.

Topics scheduled for presentation and discussion include sound retirement systems, comprehensive health services, trends in absenteeism, fringe benefit and labor costs, employee training based on attitude polls, employee development and promotion based on union-management cooperation, and industrial engineering as viewed by a union industrial engineer. The discussions will be directed especially to the responsibilities of utility industrial relations and personnel executives—in terms of who, what, why, when, where and how.

Among the speakers scheduled are James F. Oates, Jr., Chairman, The Peoples Gas Light and Coke Company, Chicago; William Gomberg, Director, Management Engineering Department, International Ladies' Garment Workers' Union, New York; R. J. Rutherford, Vice-President, Worcester Gas Light Company, Worcester, Mass.; Donald S. Bittinger, Director of Personnel, Washington Gas Light Company, Washington, D. C.; Roland S. Child, Associate Manager, Employee Relations, Central Hudson Gas and Electric Corporation, Poughkeepsie, N. Y.; V. H. Luneborg, Personnel Manager, Arkansas Natural Gas Corporation, Shreveport, La.; Dr. Howard Lindbergh, Medical Director, The Peoples Gas Light and Coke Company, Chicago, Ill.

"Flame Family Quints"

Beaming smiles of the "Flame Family Quints," which have already won acceptance in far western window and store displays and advertising copy, have materialized into a set of figurines.

Originally developed by Knollin Advertising Agency, San Francisco and Los Angeles, for its client, the Pacific Coast Gas Association, the family is comprised of five, ceramic-like, "Resinware" 10-in. statuettes. These personify the fundamental selling points of gas fuel—speed, cleanliness, dependability, flexibility, and economy—and are named accordingly, "Speedy, Cleany, Steady, Flexy, and Thrifty."

One of the Five Quints

The P. C. G. A., holder of the copyright on the "Flame Family Quints," initiated their use in magazine advertising. The Quints came to life, equipped with qualities of unlimited versatility and everlasting life, at the hands of Tony Studios, San Diego manufacturer. They already appear in the windows of Pacific Gas & Electric Co., Coast Counties Gas and Electric Co., and San Diego Gas & Electric Co. appliance dealers and are being adopted by utilities in other states.

A major function of the statuettes is to provide a tool that will help the gas industry realize one of its chief aims: persuading dealers to put their gas appliances out front in both store and window displays. Each unit has a detachable, slotted standard of enameled wood, to hold a sign, with slogan, price or any advertising message. Since these signs are easily interchangeable, the statuettes are adaptable to many successive campaigns and new promotions.

Each of the five multi-colored statuettes has its own sparkling personality. The faces and flame-curved bodies are sculptured in half-round style. Each statuette is rendered stable and nontippable by means of a wire strut, not visible from the front.

Central Vermont P. S. Co. on Sound Footing Following Disaster of 1947

Central Vermont Public Service Corporation, which suffered severe losses in the disastrous flood of June 1947 in Rutland and vicinity, completed a permanent financing program on August 10th, paid off all its short term indebtedness, and declared preferred stock dividends.

Following last year's flood, the company had ceased payment of dividends to its stockholders and four quarterly dividends on its cumulative preferred stock, 4.15 per cent dividend series, were in arrears. The directors declared these four quarterly dividends which were paid August 20, 1948, to holders of its preferred stock of record at the close of business August 16, 1948.

Albert H. Cree, President, stated recently that "the proceeds of the financing recently completed are being used, in addition to flood reconstruction and other purposes, for the company's construction program for 1947 and 1948, including the building of rural lines to provide complete area coverage which is being substantially completed this year. More than 250 miles of rural lines are being built this year, 337 miles were built last year, 409 miles in 1946 and 157 miles in 1945—totaling well over one thousand miles since construction materials became available after the war."

Central Vermont Public Service Corporation furnishes electricity to 173 Vermont communities including Rutland, Bennington, Brattleboro, Middlebury, Springfield, Randolph, Windsor, Bradford, and St. Johnsbury as well as 16 New Hampshire communities including Claremont. It distributes gas also in Bennington, Brattleboro and Rutland.

National Safety Congress and Exposition, Chicago

The 36th National Safety Congress and Exposition, sponsored by the National Safety Council, will be held in Chicago from October 18 through October 22. Five leading hotels will house the safety sessions and expositions. They are: Stevens hotel, for the industrial safety exposition and industrial sessions; Sherman hotel, for the public safety exposition and traffic, farm, home and women's safety sessions; Morrison hotel, for industrial and school and college sessions, and Congress and La Salle hotels, for industrial sessions. For further information, write to George E. Burns, National Safety Council, 20 N. Wacker Drive, Chicago 6, Illinois.

Pacific Gas & Electric Co. Makes Appointments

N. R. Sutherland and L. Harold Anderson have been appointed as Vice President and Assistant General Manager of the Pacific Gas and Electric Company. O. R. Doerr replaces Mr. Sutherland as Vice President in charge of Sales. L. F. Galbraith, Division Sales Manager for the Pacific Gas and Electric Company in Oakland has retired. Walter D. Howell, formerly District Manager in Berkeley, replaces him.

Institute of Gas Technology Offers Home Study Courses

The Institute of Gas Technology, Chicago, has announced that it plans to offer home study courses on the gas industry. Three courses, one on manufactured gas, another on natural gas, including transmission, and a third on distribution and utilization, will be given.

The courses have been requested by many individuals and companies as well as by the Personnel Committee of the American Gas Association which will render encouragement, advice and assistance. They will be offered as soon as possible after preparation of the texts and the necessary reviewing and approval by advisory committees of the Association.

Every effort will be made to present the subject matter of the home study courses in a clear, concise manner. The level of the work will be such that an engineering graduate should experience no difficulty in comprehending it. In this way, cadet engineers may greatly accelerate the process of becoming acquainted with the nature and problems of the industry. Likewise, more experienced men may benefit by increasing the breadth of their information and reviewing ground previously covered.

Non-engineering personnel will find the discussions invaluable for gaining an appreciation of the operations of their companies, although they will not, in general be able to follow the mathematical derivations of scientific laws. For all, these texts should prove to be most useful reference.

Lewis R. Gaty Promoted

The Philadelphia Electric Company recently named Lewis R. Gaty, 532 S. Bowman Avenue, Merion, Pa., manager of the Company's engineering department, succeeding K. M. Irwin, who was recently elected vice-president in charge of engineering.

The newly appointed manager is a native of West Orange, New Jersey. Following his elementary and high school education, he was graduated from Cornell University as an electrical engineer.

Mr. Gaty has been identified with the utility industry since 1923, having served with the Pennsylvania Power and Light Company, and the Sioux City Gas and Electric Company, Sioux City, Iowa, before entering the employ of Philadelphia Electric.

Johnston Named Supt. of Gas Service Company

Harold W. Johnston on July 15 became superintendent of The Gas Service Company with headquarters in Kansas City, as announced by Chas H. Koinm, assistant to the general manager of the company. Johnston will work under the direction of Mr. Koinm. He will supervise operations, check construction requisitions, prepare construction requisitions for new properties and aid Mr. Koinm in general engineering work. Much of Mr. Johnston's time will be spent in the various company properties.

Allocation of Steel for Furnaces

Approximately 450 individual manufacturers are eligible to participate in voluntary agreement providing 233,000 tons of steel products during the next 8 months for the production of warm air heating equipment, the O.I.C. has announced. This agreement was approved by the Attorney General and Secretary of Commerce and has resulted in requests for compliance being forwarded to all proposed participants who are required to accept the requests for compliance in order to obtain immunity under the anti-trust laws and the F.T.C. Act. Most of the 450 are in the small business category, although the agreement is limited to manufacturers of warm air heating equipment, who normally obtain steel supplies direct from the mills.

Hain Appointed General Mfg. Mgr., National Radiator Co.

Benjamin T. Hain, for the past sixteen years Factory Manager of The American Radiator & Standard Sanitary Corporation, Bond Plant, Buffalo, New York, has been appointed General Manager for Manufacturing of The National Radiator Company, Robert S. Waters, President has announced.

Benjamin T. Hain

Mr. Hain has had a broad experience in the manufacture of heating equipment, both with his former company, and the Wolfe Manufacturing Company, Chicago, manufacturers of sanitary ware and brass goods.

Mr. Hain will be in charge of the manufacturing activities of all National Radiator plants, located in Johnstown, New Castle, and Middletown, Pennsylvania, and Trenton, New Jersey.

From Ships to Sips

Illustrating the theme "Everything's under Control," Robertshaw-Fulton, in a two-color advertisement in Time magazine, identifies the application of their controls in the shipping, roasting, packaging and brewing of coffee. The two-column, ⅔ page carries appropriate two-color illustrations.

Gas School and Conference, Mid-West Gas Assn.

The final plans for the Twenty-fifth Gas School and Conference of the Mid-West Gas Association have been announced by Arnold C. Rathkey of Waterloo, Iowa, president of the association. A two-day conference will be held at Iowa State College, Ames, Iowa, on September 13 and 14, with an inspection trip on the program for September 15.

Lester J. Eck of Minneapolis, first vice-president of the Mid-West, will be general chairman for the conference, and D. J. Reimers of St. Peter, Minnesota, newly elected second vice-president, will be program chairman. A program which will include distribution, utilization, production and metering subjects will be presented at three general sessions Monday (A.M. and P.M.) and Tuesday morning, with sectional meetings planned on Tuesday afternoon for round-table discussions. The traditional banquet will be held at the Sheldon-Munn Hotel Tuesday evening, September 14.

Arrangements are being made for an inspection of Northern Natural Gas Company's compressor station at Ogden, Iowa, about 20 miles from Ames, on Wednesday, September 15.

The Engineering Extension division of Iowa State College has made arrangements for manufacturers' exhibits of gas meters, regulators, tools, instruments and similar materials used in gas operating departments. There will be no exhibits of gas ranges, water heaters or other appliances at the Ames meeting. Asst. Prof. Marvin Gould of Iowa State College will be in charge of exhibits.

Subjects on the general session programs will include gas production methods, with emergency and peak load developments, training of gas servicemen, pipe protection and periodic meter change trends.

Southwestern Gas Measurement Short Course for 1949

Date has been set for the 1949 Southwestern Gas Measurement Short Course to be held April 12-14 at the College of Engineering, University of Oklahoma, Norman, Okla.

Wisconsin Public Service Granted Rate Raise

The Wisconsin Public Service Corporation was authorized July 2 by the commission to raise its gas rates 25.7% to residential consumers, 26.4% to 2,242 commercial users and 25.8% to 150 industrial customers in the cities and villages in which it operates. If gas consumption continues at the 1947 rate, the new schedules will increase revenues by $517,227. The corporation claimed its gas department had a loss of $82,488 in 1947, and if fuel and labor costs in 1948 remained at the level of last February, its losses this year would be $245,512. * * * The Menominee & Marinette Light and Traction Co. was also allowed to raise gas rates to 2,993 customers in the Marinette and Peshtigo areas following an operating loss of $23,433 in 1947.

Perfection Appoints Director of Home Economics

As its new director of home economics, Perfection Stove Company has appointed a specialist in the gas and electric fields. She is Miss Mary Ryan, for the past four years home service director of the New York State Electric and Gas Corporation.

A graduate of the College of Home Economics of Syracuse University, Miss Ryan's first business experience was with the Wesson Oil Co. In 1936, she became associated with the New York State Electric & Gas Corporation working, successively, as home service representative out of the Geneva, Ithaca, Newark, Cortland, Elmira and Binghamton offices. Early in 1944 she was appointed home service director, with headquarters in Binghamton, N. Y.

As director of home economics for Perfection Stove Company, Miss Ryan will be working with the company's proposed new line of gas ranges scheduled for production in the near future, as well as the established line of kerosene ranges.

Portable Power Tools

Catalog No. 486 issued by Syntron Company, Homer City, Pa., devotes 24 pages to illustrations and descriptions of power tools, including electric hammers, paving breakers, vibrators, electric drills, grinders and sanders and their accessories. Featured are their self-contained paving breakers and gasoline hammer tools, illustrating many applications. Copy of the catalog sent on request.

Pipe Line Protection With Magnesium Ribbon Anode

For protecting buried metal structures from corrosion by means of cathodic protection, a magnesium ribbon anode has been developed and thoroughly tested by the laboratories of The Dow Chemical Company, Midland, Michigan.

The anode has a cross section of ⅜" by ¾" and contains a centrally located core of iron wire to facilitate making permanent electrical connections and to prevent possible segregation.

It is designed for use primarily in high resistivity soils where cast anodes may not be practical because of their low current output under such conditions. The ribbon anode provides less expensive methods of installation. In addition it reduces current requirements to a minimum by offering more uniform distribution and better utilization of current from the anode.

It can be installed very simply by using a wire-laying plow on which a reel of magnesium ribbon anode is mounted. The anode is placed in a furrow between 16 and 24 inches deep and is spaced some two to 10 feet from the structure to be protected. No chemical backfill is necessary and connections are made to such structures as pipelines about every 500 to 1,000 feet where light current flows are expected. If larger current flows are involved, connections must be made at shorter intervals.

May also be used successfully as emergency protection for metal structures until more permanent protection programs are put into use, or in very low resistance soils if the rapid polarization provided by the ribbon can justify itself in terms of reduced current demand.

Anode ribbon is wound and stored on reels. Standard lengths are 1,000, 2,000 and 5,000 feet.

Handbook for Commercial Gas Men

The Commercial Kitchen, the Gas Industry's newest and largest handbook for commercial gas men, issued by the American Gas Assn., is now ready for distribution. It contains 10 Chapters of factual information covering such topics as: kitchen layouts, sales approaches, operating data, equipment selection, water heater sizing and other pertinent items which really make this required reading for every commercial gas man, service man, and sales executive.

Attractively bound in cloth, 242 pages, 8½" x 11", profusely illustrated, 72 tables for ready reference, and conveniently indexed. The price is $5.00.

Dresser Pocket Catalog

Available upon request is a new 48-page, pocket-sized booklet listing the 13 operating companies of Dresser Industries, Inc., and identifying the products and services of each.

Tied in with action shots of Dresser equipment at work in the oil, gas, chemical, mining, and other industrial fields are abbreviated lists of individual company products and their more important applications. Included also are a number of pages covering the gas-fired heating systems and automatic water heaters built by three Dresser companies for use in houses, apartments, institutions and for commercial and industrial requirements.

For copies write to Dresser Industries, Inc., 1130 Terminal Tower, Cleveland 13, Ohio.

Whittington Pump & Eng'g. Elects New Officers

At a meeting of the directors of Whittington Pump & Engineering Corporation of Indianapolis, held August 10th, the following officers were elected: Dick W. Whittington, president; Enid C. Whittington, vice president; Sylvia M. Gregory, secretary-treasurer.

GASCO
Direct Reading
GAUGE

Easy to Read. Has but one column. No computations needed.

Leak Proof:—

Gauge fluid is contained within the gauge. Just connect to the line and loosen the cap a half-turn. Made of aluminum, brass and unbreakable tubing. Will outlast several "U" gauges.

Low in cost—profitable to use.

MULCARE
Engineering Co., Inc.
53 Park Place
New York 7, N. Y.

"JOURNAL" GAS FLOW COMPUTERS

High Pressure
RANGE:
Cu. Ft. of Gas Per Hour—100-10,000 M
Diameter of Pipe—Inches ¾-30
Difference in Absolute Pressure—Lbs. per sq. in., 1-500
Sum of Absolute Pressures—Lbs. per sq. in., 2000-20
Specific Gravity—1.5-.35
Length of Pipe—Feet 100-5000
Length of Pipe—Miles 1-250

Low Pressure
RANGE:
Cu. Ft. of Gas Per Hour—10 to 500 M
Pipe Diameter—¾" to 48" (including standard and actual weight up to 4")
Pressure Loss—Inches .01-10
Length of Pipe—Feet 30-30,000
Specific Gravity—1.5-.35
Constants—1400-1000

Made of durable celluloid, encased in a convenient leatherette cover with complete instructions. Actual size 6¼ x 7½

$4.00 Each Postpaid

American Gas Journal
53 Park Place, New York 17

GAS PLANT EQUIPMENT
UGI REFINERY GAS REFORMING PROCESS
UGI NATURAL GAS REFORMING PROCESS
UGI HEAVY OIL PROCESS
GAS DISTRIBUTION
PIPE LINE CONSTRUCTION
THE U.G.I. CONTRACTING COMPANY
A DIVISION OF
UNITED ENGINEERS & CONSTRUCTORS INC
NEW YORK PHILADELPHIA CHICAGO
MAXIMUM RETURN TO CLIENT PER DOLLAR EXPENDED

Empire sales representatives enjoyed a Barbecue at home of Vice-President L. A. Brand (extreme left). President Edward Kaufman kneels in center of picture with cork ball bat in hand.

Empire Stove Company 1948 Sales Convention

On July 7, 1948, over forty sales representatives of the Empire Stove Company from all parts of the United States gathered at the DeSoto Hotel in St. Louis for the annual Sales Convention. Arranged and conducted by Mr. L. A. Brand, Vice-President of the company, it featured the post-war re-entry of the Empire Stove Company of Belleville, Illinois into the cooking appliance field.

Edward Kaufman, Empire President, welcomed all the representatives and thanked them for their part in establishing new sales records.

The entire line was displayed at the convention with a companion line of commercial gas cooking equipment manufactured by the Morley Manufacturing Company of Mascoutah, Illinois.

When the meeting opened, many of the Empire appliances appearing on the speaker's platform were concealed. These proved to be new models that will be produced by Empire in the immediate future. The first product to be introduced was a new shallow floor furnace. By using the new horizontal type "Thriftmatic" Burner in the floor furnace, its height has been reduced to 24 inches. One shallow model is made to fit between standard 16" joists.

The most interesting moment of the entire convention proved to be the unveiling of the new Empire gas range. A full sized 42" gas range with many new exclusive features captured attention with enthusiastic applause. Among these features are a heavy, well-braced chassis, an oven body that is very substantially built, large ovens and broilers, leveling bolts for uneven floors, and a front connection that permits perfect alignment with the stove placed flush with the wall.

Mr. Kaufman announced that the Shallow Furnaces would be available for shipment before the 1948-9 heating season. Definite dates for range production and shipment had not been established at that time.

Production and engineering chiefs, Adrian Bauer and Carl Mueller, covered all the details of the design and manufacture of the new floor furnaces and the range.

The last morning of the convention was devoted to a round table discussion and concluded with a banquet at 7:00 P.M. when advertising plans for 1949 were presented.

On Saturday, the entire group was entertained at a barbecue at the country home of Mr. Brand. The accompanying photo was taken on this occasion.

Opens First Regional Office in Texas

The Empire Stove Company of Belleville, Illinois, manufacturers of gas heating and cooking appliances, opened its first Texas Regional office in July at 3736 Granada Avenue, Dallas 5, Texas.

Lee A. Brand, Vice-President of Empire, has announced the appointment of Allison F. H. Scott as Dallas Regional Manager. Mr. Scott has an impressive background of heating experience and is well-known throughout the area he will serve.

Scott has also served as special assistant to the deputy Federal Housing Administrator and as special consultant to Office of Price Administration in Washington.

Handbook on Air Heating and Winter Air Conditioning

Skillfully and effectively assembled to cover every phase of air heating and air conditioning is the 320 page volume written by John W. Norris, vice president of Lennox Furnace Co. of Marshalltown, Iowa.

Covering all fuels, it carries the reader through the complex problems of the industry. It is indexed and cross-indexed and arranged in logical, practical and efficient engineering sequence.

Subject matter is clearly and quickly identified with topical headings, and is clarified by hundreds of drawings, graphs, charts and tables with which the entire volume is illustrated. Entire pages are devoted to graphic treatment of many of the subjects covered. Every illustration is clearly identified with the accompanying text to give the reader and the student the feeling of actually seeing the problem developed and explained in its physical form.

It serves to answer engineering, installation and service problems in simple, clearly defined drawings and charts and the major desire of the author has been a common sense approach to the whole field of warm air heating and winter air conditioning.

The book can be used for basic warm air heating fundamentals which are so essential to effective sales effort and is recommended for its practicability as a study in orientation for the new salesman, particularly. Price $5 a copy, postage paid.

Maloney with Caloric Stove

Caloric Stove Corporation has appointed Andrew J. Maloney as manufacturer's representative in the Washington, D. C., marketing area, comprising part of Virginia and Maryland in addition to the national capital. The announcement was made by Julius Klein, Caloric vice-president and general sales director.

Andrew J. Maloney

Mr. Maloney, until recently, was general sales manager of the Washington Gas Light Company. He was associated for fifteen years with that company which, under his sales leadership, won national recognition for the volume of its gas range and water heater sales. Mr. Maloney also will be manufacturer's representative for the Waldorf Heater Company, and will have his new offices in the Bond Building, Washington.

Natural Gas Reserves in Alberta, Canada

Opposition of Alberta to the export of natural gas will continue according to Premier Manning until it is proven that there is a superabundance of gas available in the province. The Premier said that natural gas was necessary in the development of secondary industries in Alberta.

He was commenting on the approval given by the federal government to an application for incorporation of a private company which would build a natural gas pipeline from Edmonton to Winnipeg and intermediate points.

"We opposed the application because it is against provincial policy to sell natural gas 'abroad' until our potential of industrial development is realized," the Premier said. "That is many years away."

W. J. Dick, prominent Alberta mining engineer, claims that the export of natural gas from Alberta to the extent proposed in pipeline schemes now under consideration would reduce the life of the proven reserves in the province to about nine years and would cut the life of both the proven and the probable reserves to 23 years.

The province's calculated proven and probable gas reserves of 3,618,000,000,000 cubic feet seems large, until examined in the light of future needs, said Mr. Dick.

Consumption of gas in Alberta now is 49,000,000,000 cubic feet annually. Without any increase in consumption, the proven reserves would last a little more than 28 years and the combined proven and probable reserves about 70 years.

A proposed pipeline to the U. S. and Vancouver would export 55,000,000,000,000 cubic feet from Alberta each year. A proposed line to Winnipeg would require another 50,000,000 cubic feet annually from Alberta.

Without allowing for any increase in consumption of natural gas for new industries in Alberta the total consumption of natural gas would be 155,000,000,000 cubic feet per year.

Due to the serious oil situation in Canada and the United States it is reasonable to expect the installation of synthetic oil plants in Alberta, using gas, if adequate supplies are available, stated Mr. Dick. A synthetic plant producing 10,000 barrels of oil per day would require 26,000,000,000 cubic feet of gas annually.

With only one such plant in Alberta combined with our present consumption and the proposed pipeline for exporting, our proven reserves would be sufficient for eight years, said Mr. Dick. The proven and probable reserves would then last just 20 years.

Mr. Dick said no consideration had been given to possible reserves which may prove to be large. However, these are mainly in inconvenient places, bordering on the east slope of the Rocky Mountains and in the northern portion of the province.

Mr. Dick referred to the Leduc sector "gas cap" of 389,000,000,000 cubic feet, which is 11 per cent of the Alberta proven and probable reserves.

This amount of gas would not be available until practically all of the oil is extracted from the field, because it would possibly be used to repressure the field, he stated.

Referring to Canada's oil needs, Mr. Dick said three times the present production of the Leduc field is required to fill the present import needs of the prairie provinces. Thirty-six fields with similar production would be required to meet Canada's imports.

Bryant Sound-Slide Films Available for Meetings

Two new Bryant sound-slide films answer technical and sales problems of the dealer. They give him a complete knowledge of the product, enabling him to more effectively sell the Bryant line of water heaters. Newly designed and newly named, this line includes the Blue Seal, Black Seal and Red Seal models. Led by the highest-quality, guaranteed Blue Seal model, the Bryant line offers dealers an efficient, good-looking water heater model for every job and within every price classification.

Although these films were made primarily for meetings conducted by Bryant distributors, they are being made available for purchase by utility companies, dealer organizations and association groups at nominal cost. The two 35 mm sound-slide films, with one 16-inch, two-side 33 RPM recording can be secured at a total charge of $10.00 from the sales promotion department of Bryant Heater Company, 2036 East 22nd Street, Cleveland, Ohio.

New Bryant Distributor For Central Texas

Bryant Heater Company has appointed Mr. Karl W. Schick the Bryant distributor for Dallas, Texas.

Schick has a long record in the selling of heating equipment of all types. For some time he had been associated with the Minneapolis-Honeywell Regulator Co. in various capacities. Recently he had been regional manager of the southwest division of Minneapolis-Honeywell with his headquarters in Dallas.

Since he is well acquainted with the heating problems and market in the Dallas area, Schick is in a particularly advantageous position to provide a complete distribution service on Bryant products. Operating under the name of Bryant-Schick, Inc., he and his staff of heating engineers will supply expert advisory service to dealers, architects and builders.

Located at 1123 N. Haskell Ave., Dallas, Texas, Schick will maintain a complete line of Bryant gas heating equipment.

Detroit-Michigan Stove Co. Appoints J. M. Storm Jr.

Mr. John C. Pankow, Director of Sales of the Detroit-Michigan Stove Company, has announced the appointment of Mr. John M. Storm, Jr., as District Manager in the company's Southwestern Division. Mr. Storm will work under the direction of Mr. Jack Little, Southwestern Division Sales Manager and will handle both domestic and commercial cooking equipment.

Coleman, Inc. Buys Indiana Factory

The Coleman Company, Inc., has purchased the La Porte, Indiana, factory of Hoosier Industries, Inc., it was announced by Clarence Coleman, vice president in charge of production.

A complete line of automatic water heaters in both oil and gas-burning models will be produced there, Coleman said.

Lee P. Corsbie, president of Hoosier Industries, has been retained as general manager of the Indiana plant.

In addition to the La Porte factory Coleman operates two manufacturing plants in Wichita and one in Toronto, Canada. Sales offices are maintained in Wichita, Philadelphia, Chicago, Los Angeles, Honolulu, T. H., Toronto, and London, England.

GPM
IRON HYDROXIDE
The mark of
unerring dependability
in purification
GAS PURIFYING MATERIALS CO., INC.
3-15 26th Ave.
Long Island City 2, New York

CLEVELAND
"A" TYPE METERS
"B" TYPE METERS
DIAPHRAGMS
Cleveland Gas Meter Co.
ESTABLISHED 1875
2009 Rockwell Ave., Cleveland 14, O. Phone CHerry 2351

Gas Range Sales Climb

Unit shipments of domestic gas ranges in May, 1948, increased 29.0 per cent over the same month in 1947, according to reports from companies representing 70 per cent of the industry. For the first five months of 1948, unit shipments were 24.3 per cent greater than during the same period last year.

Unit shipments of gas ranges for use with Liquefied Petroleum gas in the first five months of this year were 28.2 per cent higher than a year earlier and constituted approximately 26 per cent of the total shipments.

During the twelve months ending May 31, 1948, reporting companies shipped 1,819,280 domestic gas ranges with a total manufacturers' value of $174,029,000. Unfilled orders for domestic gas ranges on May 31 last totaled 316,844 units.

Residential gas range sales reached an all-time high of 1,444,000 units during the first six months of 1948 and exceeded by 283,000 the sales during the first six months of 1947, the previous peak year, according to the Gas Appliance Manufacturers Association.

Total 1948 annual production is expected to exceed the previous peak year by approximately 500,000 and reach 2,800,000 units.

Gas ranges for use with LP gas (bottled) totaled 375,000 units during the first six months of 1948 and approximated 26 per cent of the industry's sales. This compares with 290,000 such units sold during the same period of last year.

Bryant Distributor Appoints New Vice-President

Mr. Walter J. Leaumont, Sales Manager of the Southern Heater Company of New Orleans, has been elected Vice-President at a recent board meeting of the company. The announcement was made recently by Mr. Emmett A. Smith, President of the Southern Heater Company. Mr. Leaumont has been connected with this company for over 13 years and is responsible for the growth of its heating department.

For 12 years the Southern Heater Company has been the distributor in the New Orleans area for the Bryant line of gas heating equipment.

Bourn With Stewart-Warner

Joseph F. Bourn, architectural engineer of Dallas, Texas, has been appointed Southwestern sales representative for the home heating equipment division of Stewart-Warner Corporation at Dallas, Texas, it was recently announced by Key Ryan, in charge of "South Wind" home heater sales.

From his Dallas headquarters Bourn will be responsible for distributor contacts in Texas, Oklahoma, Arkansas, Louisiana and New Mexico, Ryan said, adding that Bourn's appointment is the first step in distribution expansion plans for the South Wind gas-burning home heater, heretofore marketed only in two test markets in Texas.

Penna. Power & Light to Sell Gas Properties in Harrisburg and Vicinity

The Boards of Directors of Pennsylvania Power & Light Company, The United Gas Improvement Company and The Harrisburg Gas Company (a subsidiary of U.G.I.) have authorized their respective officers to enter into mutually satisfactory agreements under which Pennsylvania Power & Light Company will sell its gas properties and franchises in Lancaster County, Pa., to a company to be organized and owned by U.G.I., and its gas properties and franchises in Carlisle, Cumberland County, Pa., to The Harrisburg Gas Company.

After the final details have been worked out, the necessary applications for approval will be filed with the regulatory bodies having jurisdiction over the various transactions involved in the purchase and sale of these properties.

The United Gas Improvement Company's present subsidiary gas companies serving a large section of southeastern Pennsylvania are The Harrisburg Gas Company, Allentown-Bethlehem Gas Company, Consumers Gas Company (Reading), Lebanon Valley Gas Company and The Philadelphia Gas Works Company, which operates the gas works owned by the City of Philadelphia.

The above statement was signed by Charles E. Oakes, President, Pennsylvania Power & Light Company, Walter E. Long, President, The United Gas Improvement Company, Leonard B. Richards, President, The Harrisburg Gas Company.

W. Roberts Wood Elected Executive V. President

The members of the board of directors of The Girdler Corporation, Louisville, Ky., have elected W. Roberts Wood executive vice president of the organization.

Mr. Wood was born in Louisville and received his degree of Bachelor of Chemistry at Cornell University. He was associated with DuPont in the East before joining The Girdler Corporation on November 1, 1929. He was placed in charge of the firm's Gas Process Division on October 1, 1938, and on June 20, 1941, he was elected vice president.

Tennessee Heating Sales Co. Dravo Representative in South Central Area

The Tennessee Heating Sales Company, Knoxville, has just been appointed distributor for Dravo "Counterflo" Heaters in Tennessee, east of the Tennessee River; Southeast Kentucky; Southwest Virginia, and North Carolina, west of Asheville.

The company, organized in April 1947, is headed by R. A. Seepe, president, It represents well-known manufacturers, and has registered professional engineers on its staff. The firm offers complete engineering service on heating and ventilating to industrial plants.

Compressors. An eight-sheet folder with cover, issued by Cooper-Bessemer Corporation, Mount Vernon, Ohio, gives a condensed overall summary with illustrations of the complete line of C.-B. products. Information is given on the design, construction and application of each type of compressor. Sixteen types are illustrated and described.

Meter and Regulator Diaphragms. Vulcan Coated Fabrics, a six page bulletin issued by Vulcan Proofing Company, First Ave. and 58th Street, Brooklyn 20, N. Y. features their coating No. 343, especially developed for production of diaphragms for meters, regulators, valves and controls. This informative bulletin sent on request.

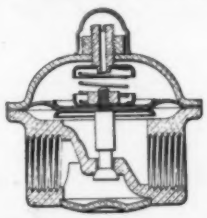
Safety Control Unit.—The new General Controls MR-2-5 is an all-in-one, simplified, on-off and safety shut-off control unit designed particularly for floor, central, small space and water heaters.

Flow of all gas automatically stops when the pilot is extinguished. During the reset operation, gas flows to the pilot burner only. No gas can pass to main burner until the pilot is ignited and the safety valve set in the operating position. Descriptive bulletin available from General Controls Co., 801 Allen Avenue, Glendale 1, California.

Fluid Meter Data.—Bailey Meter Company, Cleveland, Ohio, has issued revised Bulletin No. 301-B, "Bailey Fluid Meters for Steam-Liquids-Gases."

This 40-page booklet is divided into ten different sections discussing, among other things, flow mechanisms, primary elements, integrators, auxiliary recorders, accessories, and installation features. Each section is well illustrated by photographs and drawings.

GASCO
Hy-Capacity
APPLIANCE
REGULATORS



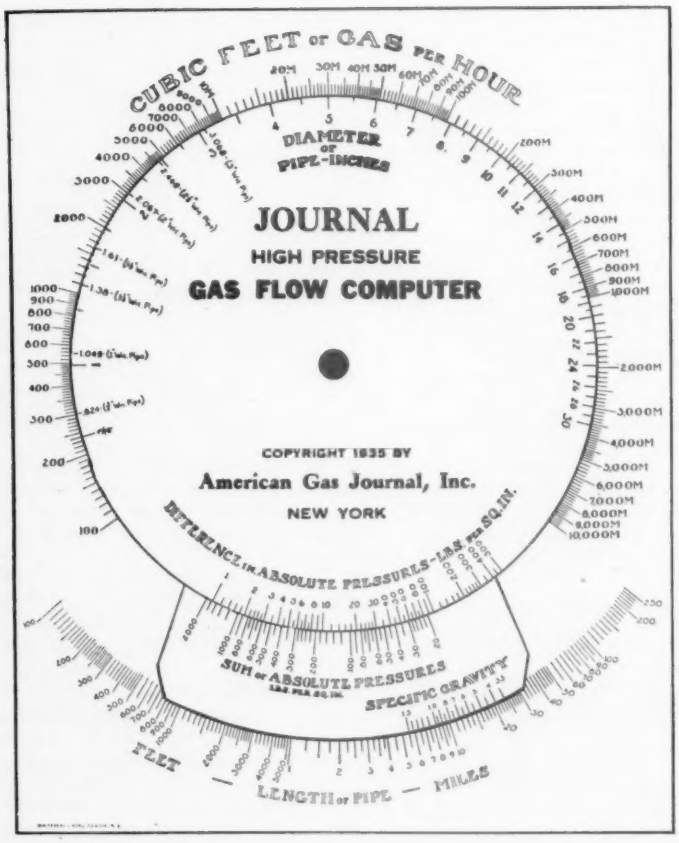
These spring-adjusted regulators, designed especially for low input gas appliances assure perfect regulation and safety.

Sturdy all-brass construction in all sizes from ¼ inch pipe size, up. Diaphragm leaks due to shrinkage eliminated.

Dust cap over vent hole prevents stoppage.

Mulcare Engineering Co. Inc.
53 Park Place, New York 7, N. Y.

"Journal" Gas Flow Computers



These Improved Gas Flow Computers are available in durable plastic, encased in a convenient leatherette cover with complete instructions.

Actual Size 6¼ x 7½

☆

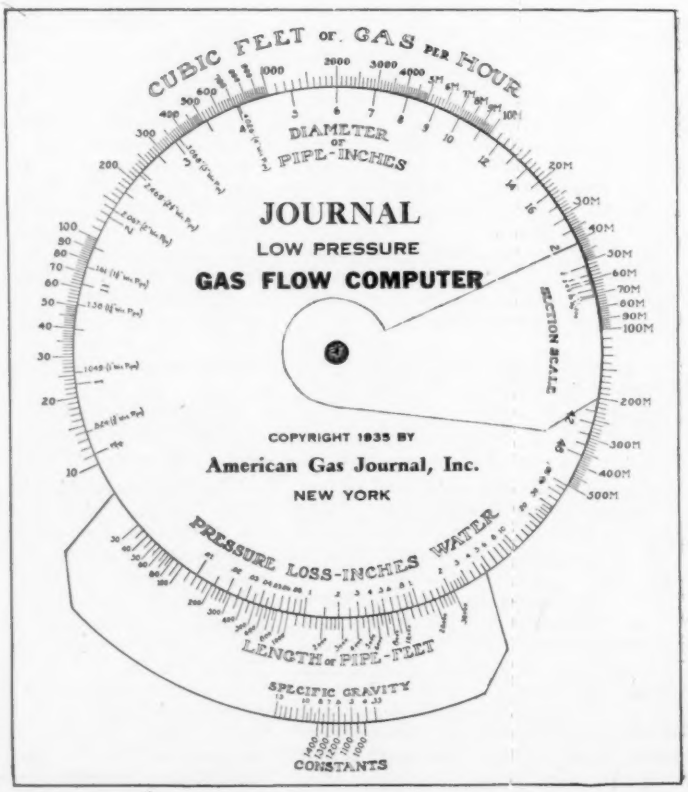
High Pressure Computer Range:

Cu. Ft. of Gas Per Hour—100-10,000 M
Diameter of Pipe Inches ¾-30
Difference in Absolute Pressure—Lbs. per sq. in. 1-500
Sum of Absolute Pressures—Lbs. per sq. in. 2000-20
Specific Gravity 1.5-.35
Length of Pipe—Feet 100-5000
Length of Pipe—Miles 1-250

Low Pressure Computer Range:

Cu. Ft. of Gas Per Hour—10 to 500 M
Pipe Diameter ¾" to 48" (including standard and actual weight up to 4")
Pressure Loss Inches .01-10.
Length of Pipe—Feet 30-30,000
Specific Gravity 1.5-.35
Constants 1400-1000

Price $4.00 Each, Postage Prepaid



AMERICAN GAS JOURNAL
53 Park Place, New York 7, N. Y.

Please enter our order for Computers as follows at $4.00 each, postage prepaid.

....HIGH Pressure Computer

....LOW Pressure Computer

NAME .....

ADDRESS .....

INDEX TO ADVERTISERS

American Meter Co. ..... —
American Stove Co. ..... —
Autogas Company 33
Bryant Heater Co. 2
Cast Iron Pipe Research Association, The 4-5
Chaplin-Fulton Mfg. Co. ..... —
Cleveland Gas Meter Co. 46
Cleveland Heater Co. 10
Cleveland Trencher Co. 39
Columbia Burner Co. 28
Connolly, Inc. 36
Cruse-Kemper Co. 29
Dearborn Stove Co. ..... —
Dresser Industries ..... —
Empire Stove Company 8
Gas Appliance Mfrs. Assn. 6
Gas Machinery Co. 7
Gas Purifying Materials Co. 46
General Gas Light Co. 19
Hydrauger Corporation ..... —
Ka-Mo Tools, Inc. ..... —
Lattner Mfg. Co., P. M. 49
Lube Jack Company 30
Metric Metal Works ..... —
Mulcare Engineering Co. 44, 47
National Airoil Burner Co. ..... —
Norton Company 51
Pacific Gas Corporation ..... —
Pittsburgh Equitable Meter Division, Rockwell Manufacturing Co. ..... Front Cover
Reynolds Gas Regulator Co. 28
Roberts-Gordon Appliance Corp. 28
Robertshaw-Fulton Controls Co. ..... —
Roper Corp., Geo. D. ..... —
Safety Gas Main Stopper Co. 49
Semet-Solvay Engineering Division, Allied Chem. & Dye Corporation 3
Servel, Inc. 20-21
Skinner Co., M. B. ..... —
Sprague Meter Co. ..... Back Cover
Stacey Bros. Gas Construction Division of Dresser Industries 24
Stacey Manufacturing Co. 27
Superior Meter Co. ..... —
Syntron Co. 17
United Engineers & Constructors, Inc. 44
Vulcan Proofing Co. ..... —
Whittington Pump & Engineering Co. 23

Sales Engineer Wanted

To take charge of New York office of a large company furnishing shop fabricated and field erected equipment made of steel, steel alloys and aluminum for Gas, Petroleum and Chemical Industries. State qualifications, references and salary expected. Replies strictly confidential. Address Box 187, c/o American Gas Journal, Inc., 53 Park Place, New York City 7.

Plant Supt. Wanted

Wanted experienced water gas plant superintendent to take charge of small plant located in Florida. Winter peak load 1,500,000 cubic feet. Plant capacity 2,500,000 cubic feet. Must be experienced, sober and capable. Good salary and living conditions. Reply Box No. 188, c/o American Gas Journal, 53 Park Place, New York 7, N. Y.

FOR SALE

2—used #7—9' vertical double-geared Wilbraham-Green Gas Exhausters on bedplate with 7 x 8 vertical enclosed self-oiling Troy Engines.

1—12" x 30" Connersville Rotary Displacement Meter.

LEWISTON GAS LIGHT CO.
Lewiston, Maine

Conveyors.—Robins Conveyors Division Hewitt-Robins Inc. has issued Bulletin No. 125-A. Two pages of pictures illustrate twelve popular units manufactured by the Robins Conveyors Division, 270 Passaic Ave., Passaic, N. J.

Water Heater Coils. Issued by Dormont Mfg. Co., 1314 High Street, Pittsburgh 12, Pa. is a catalog sheet 48-04 listing 60 different replacement coils for water heaters and six new makes of heaters not listed in their catalog 47-12. Catalog and supplementary sheet available on request.

The Reliable Shut-Off for Street Mains

THE GOODMAN STOPPER

Now has the "Z" handle for easy manipulation. When locked in place it holds. Stopper cannot slip. Gas cannot pass. Adjusted in 30 seconds.

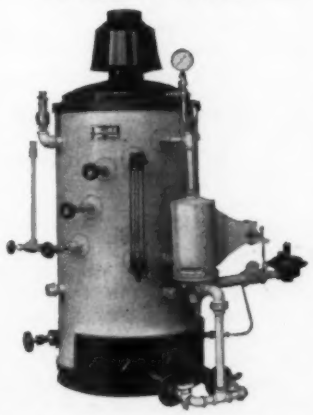
Ask for circulars on this and other distribution equipment.

Nearly a half century of service to the Gas Industry.

Safety Gas Main Stopper Co.
523 Atlantic Avenue, Brooklyn, New York

LATTNER GAS BOILERS

1 H.P. to 45 H.P.



2 H.P. Gas Fired Pressing machine boiler. 100 lbs. ASME Code.

P. M. LATTNER MFG. CO.
CEDAR RAPIDS, IOWA

New Bonus Plan for Appliance Sales Heads

SOUTHERN California Gas Co. of Los Angeles has underway a novel campaign to encourage the development of appliance purchase prospects by employees through a program under which the company will distribute a substantial cash bonus for apliance sales leads.

Inaugurated in mid-June through an announcement by President F. S. Wade, the plan calls for the disbursement of a total of $7500 in cash bonuses which will be paid on an earned-point basis to employees of the utility who submit names of prospective appliance purchasers that result in ultimate sales by the dealer to whom the prospect's name is referred.

The Prospect Bonus Campaign, as it has been named, began June 21 and will close October 15. All gas company employees except those in the General Payroll or in the Sales Departments are eligible.

Appliances qualifying under the program include gas ranges, refrigerators, water heaters, furnaces, dishwashers, clothes driers, air conditioners and other domestic and commercial equipment. The total points earned by all employees will be used as the determining factor for evaluating the work of individuals. The purpose of the campaign to be three-fold—to benefit the employees, appliance dealers and the company.

The amount of bonuses paid an employee of the gas company will be based on the number of points accumulated during the campaign. Points will be credited for any lead resulting in the sale and installation of a qualified gas appliance. Because some employees, due to the nature of their duties and hours, have a greater opportunity to make contacts with the public, the allowance of points is not the same for each employee but depends on the amount of public contact opportunity an employee's normal day's work affords him or her.

For this reason the employees have been divided into three groups, according to their opportunity to meet the public during working hours.

Allowed 10 points for each sale are those in Group A, which includes branch office representatives, branch office supervisors, local agents and managers, order clerks, stenographers, senior telephone order clerks, servicemen. Included in Group B are employees with fewer opportunities of meeting the public. These are allowed 20 points, and include adjusters, appliance installation representatives, clerks, cashiers, collectors, commercial service representatives, customer service representatives, meter readers and service inspectors.

All other employees, except personnel of the General Payroll and Sales Departments, are in Group C, and are entitled to receive credit for 30 points per sale.

At the conclusion of the campaign the total points earned by all employees will be added and then divided into the $7500 to determine the amount per point to be paid out.

The company has prepared books of printed prospect slips which are made available to employees. The slips must be filled out in triplicate. Two copies are submitted to the company sales office; the third is retained by the employee as a record of his work. The employee is notified of the final results of sales by return to him of the original prospect slip.

The name of each prospect submitted is assigned by the sales office to the nearest dealer in the prospect's neighborhood.

In the current Prospect Bonus Campaign, the company has made a special provision to cover new construction prospects. In such cases the rules of the contest allow credit for sales to be granted an employee only when the prospect slip was submitted prior to the issuance of a building permit by a sales representative.

So. California Gas Makes Personnel Changes

The Southern California Gas Company reports several important personnel changes. F. M. Banks is now Vice President and Assistant General Manager; R. R. Blackburn, Vice President and Secretary; W. R. Davis, Vice President and Personnel Manager. Other changes make Frank N. Seitz General Supervisor of Sales Promotion in the general office. C. N. Alexander replaces Mr. Seitz in the Glendale office, H. A. Proctor is Acting Manager of Engineering Services, and R. I. Snyder Acting Manager of Purchases and Stores respectively, acting for B. M. Laulhere and G. W. Carbee both on extended leaves of absence due to illness.

Servel "All Year" Air Conditioning Protection Plan

A five year protection plan for Servel "All-Year" Air Conditioners has been announced by J. A. Gilbreath, sales manager of the air conditioning division of Servel, Inc., Evansville, Indiana.

The new warranty policy will cover all "C" model air conditioners produced by the company and will be retroactive to cover all units which have been manufactured and sold since April 1, 1946.

In the new policy Servel, Inc. warrants the air conditioner to be free from defects in material or workmanship under normal use and service for a period of five years from the date of original installation, provided proper evidence of installation is reported at the factory. Servel's obligation under this warranty shall be limited to repairing or replacing any part which, through examination at the factory shall be disclosed as defective. Transportation to and from the factory will be allowed on shipment of parts for replacement and return of defective ones. Local delivery costs and replacement labor are not included.

All parts of the conditioner are covered by this protection plan except deterioration of exterior finish due to damage or normal wear, or replacement of filters, belts and fuses. In addition, fan motors and bearings will continue to be protected for one year only.

In announcing the new policy Mr. Gilbreath said that the one year warranty on Evaporative Water Coolers remains unchanged.

Servel Inc. Releases Newspaper Ad Mats

Three new newspaper ad mats on the Servel Gas Refrigerator were released in July for the use of Servel dealers.

R. J. Canniff, advertising and sales promotion manager for Servel, announced that the mats are available in one, two, three and five column sizes. These advertisements which are planned for local cooperative advertising, follow closely the general technique of Servel national magazine advertising.

Some new small space ads are in preparation and will be released within the next few weeks.

Water Heating With L. P. Gas

How a tempering tank can save the L. P. Gas user as much as $1.40 a month on water heating costs . . . how smaller size water lines can save as much as 56 cents a month—these are just two of the installation tips described in Bryant Heater Company's new 16-page booklet, "Water Heating with L. P. Gas."

Written by Harry Jones, head of Bryant's L. P. Gas Division, this helpful booklet describes every important phase of a water heater installation. Water consumption charts and sizing charts are shown. Drawings illustrate various methods of installing heaters with tempering tanks, including the automatic storage water heater used as an auxiliary to a solar heater and the heater with a pre-heating tank.

The comparative operating costs of water heating—with and without tempering tanks—are demonstrated in a graphic example. A diagram shows the important effect of the size of water lines on L. P. Gas consumption. Other interesting pages discuss how to select adequate size water heater, its location, and the proper tank water temperatures; return circulating systems and special series installations are pictured.

A limited quantity of the booklets is available for distribution. Write to the Bryant Heater Company, 17825 St. Clair Avenue, Cleveland 10, Ohio.

Appliance Market Analysis In St. Paul, Minnesota

A comprehensive consumer analysis of St. Paul, Minn., the second annual report, published by St. Paul Dispatch-Pioneer Press, is a 150 page book covering all household appliances.

Gas ranges are used in 83.2% of the homes and 12.3% use electric ranges. 97.8% of the housewives do some or all of their baking. For bread baking the percentage is 42.9.

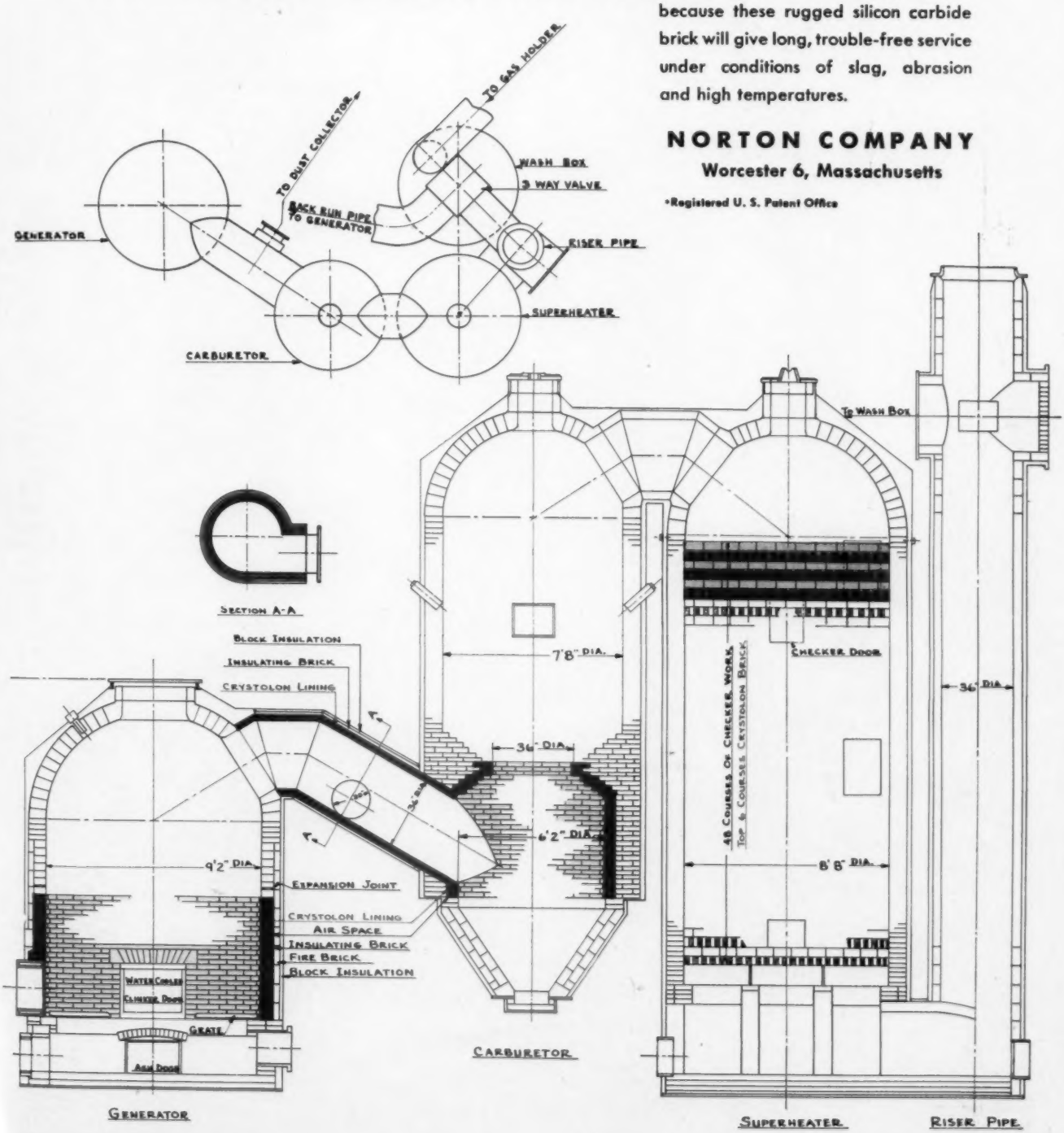
A list of range brands is given in order of their popularity.

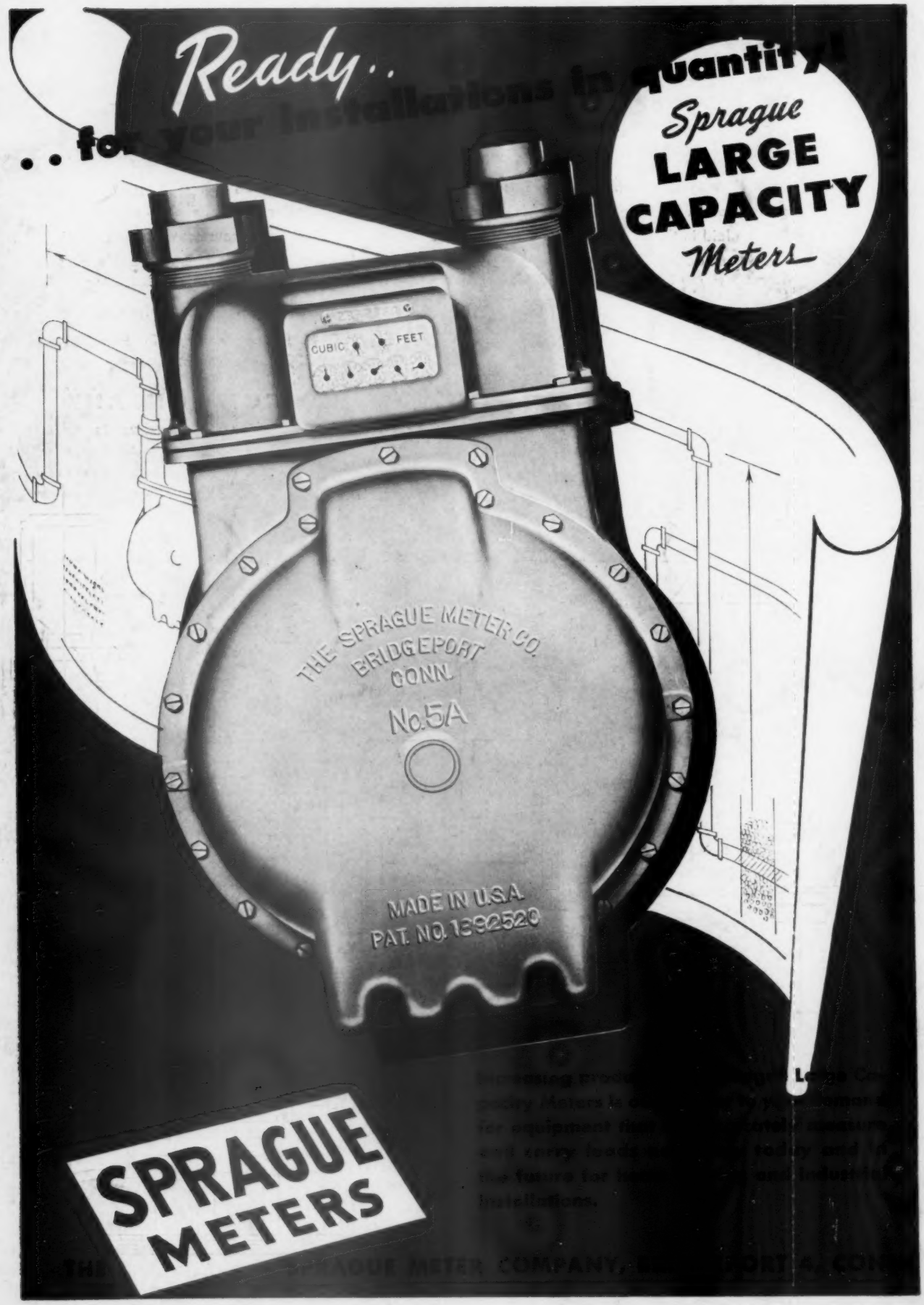
In Generator, Carburetor and Superheater It Pays to Install CRYSTOLON* Brick

The drawing below shows the installation of CRYSTOLON Brick in a reverse flow, open carburetor type of water gas set. Twenty-four courses of CRYSTOLON Brick were laid in the generator, extending up five feet from the grate line. A full lining of CRYSTOLON Brick was set in the generator offtake, and 28 courses of these brick were laid in the base of the carburetor. In some recent installations six courses of CRYSTOLON Brick have also been added to the checkerwork in the top of the superheater. CRYSTOLON Brick are selected because these rugged silicon carbide brick will give long, trouble-free service under conditions of slag, abrasion and high temperatures.

NORTON COMPANY
Worcester 6, Massachusetts

*Registered U. S. Patent Office




Ready..
Sprague
LARGE
CAPACITY
Meters
CUBIC FEET
THE SPRAGUE METER CO.
BRIDGEPORT
CONN.
No.5A
MADE IN U.S.A.
PAT. NO. 1392520
SPRAGUE
METERS